

=> FILE REG

FILE 'REGISTRY' ENTERED ON 24 APR 2009

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=> DISPLAY HISTORY FULL L1-

FILE 'HCAPLUS' ENTERED ON 24 APR 2009

L1 33 SEA SMITS V?/AU  
L2 199007 SEA POLYPROPYLENE# OR POLY(A)PROPYLENE#  
L3 31562 SEA ISOTACT? OR ISO(A)TACT?  
L4 1 SEA L1 AND L2 AND L3

FILE 'REGISTRY' ENTERED ON 24 APR 2009

L5 1 SEA 25085-53-4  
L6 1 SEA 130638-44-7  
L7 1 SEA 217176-68-6  
E 1-PROPENE, HOMOPOLYMER/CN  
L8 1 SEA "1-PROPENE, HOMOPOLYMER"/CN

FILE 'HCAPLUS' ENTERED ON 24 APR 2009

L9 25777 SEA L5  
L10 1251 SEA L8 (L) (ISOTACT? OR ISO(A)TACT?) 9  
L11 413 SEA L6 OR L7  
L12 67 SEA L11 AND (L9 OR L10)

FILE 'LREGISTRY' ENTERED ON 24 APR 2009

E PROPYLENE/CN  
L13 1 SEA PROPYLENE/CN  
D RN  
L14 54 SEA 115-07-1/CRN  
E ETHYLENE/CN  
L15 1 SEA ETHYLENE/CN  
D RN  
L16 141 SEA 74-85-1/CRN

FILE 'REGISTRY' ENTERED ON 24 APR 2009

L17 21 SEA L14 AND L16 AND 2/NC  
L18 1597 SEA ISOTACT?  
L19 7 SEA L17 AND L18

FILE 'HCAPLUS' ENTERED ON 24 APR 2009

L20 692 SEA L19  
L21 972 SEA L17 (L) (ISOTACT? OR ISO(A)TACT?)

L22 4 SEA L11 AND (L20 OR L21)  
L23 5053 SEA (ROTO? OR ROTAT?)(2A)(MOLD? OR MOULD? OR CAST? OR  
BLOW? OR BLEW? OR INJECT? OR STRETCH?) OR ROTOMOLD? OR  
ROTOMOULD? OR ROTOCAST? OR ROTOBLOW? OR ROTOBLEW? OR  
ROTOSTRETCH?  
L24 85844 SEA (INJECT? OR STRETCH? OR BLOW? OR BLEW?)(2A)(MOLD? OR  
MOULD? OR CAST?) OR BLOWMOLD? OR BLOWMOULD? OR BLOWCAST?  
L25 1 SEA (L12 OR L22) AND L23  
L26 1 SEA (L12 OR L22) AND L24

FILE 'LREGISTRY' ENTERED ON 24 APR 2009  
L27 STR 130638-44-7

FILE 'REGISTRY' ENTERED ON 24 APR 2009  
L28 50 SEA SSS SAM L27

FILE 'HCAPLUS' ENTERED ON 24 APR 2009  
L29 100490 SEA HOLLOW?  
L30 0 SEA (L12 OR L22) AND L29

FILE 'REGISTRY' ENTERED ON 24 APR 2009  
L31 1440 SEA SSS FUL L27  
SAV L31 ROG266/A  
L32 10783 SEA (C (L) H)/ELS (L) 2/ELC.SUB AND PMS/CI  
L33 236 SEA L18 AND L32

FILE 'HCAPLUS' ENTERED ON 24 APR 2009  
L34 1461 SEA L31  
L35 27971 SEA L33  
L36 21074 SEA L32 (L) (ISOTACT? OR ISO(A)TACT?)  
L37 243 SEA (L34 OR L11) AND (L9 OR L10 OR L20 OR L21 OR L35 OR  
L36)  
L38 2 SEA L37 AND L23  
L39 12 SEA L37 AND L24  
L40 7677 SEA MFI OR (MELT? OR MOLTEN?)(3A)FLOW?(3A)(INDEX? OR  
INDICE? OR PARAMET? OR VALU? OR NUMBER? OR NUMERIC?)  
L41 2 SEA L40 AND L37  
L42 0 SEA L37 AND L29  
L43 10865 SEA CAVIT?(2A)(MOULD? OR MOLD? OR CAST? OR BLOW? OR  
BLEW? OR INJECT? OR STRETCH?)  
L44 0 SEA L43 AND L37  
L45 0 SEA L37 AND CAVIT?  
L46 19 SEA L22 OR L25 OR L26 OR L38 OR L39 OR L41  
L47 5 SEA L46 AND L12  
L48 19 SEA L46 OR L47  
L49 62 SEA L12 NOT L48  
L50 16 SEA 1808-2004/PY,PRY,AY AND L48

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L51          58 SEA 1808-2004/PY,PRY,AY AND L49
L52          51 SEA L51 AND 35/SC,SX
L53          11 SEA L51 AND 37/SC,SX
L54           4 SEA L51 AND 38/SC,SX
L55           2 SEA L51 AND 36/SC,SX
L56          14 SEA L53 OR L54 OR L55
L57           8 SEA L56 AND L52
L58          14 SEA L56 OR L57
L59          44 SEA L51 NOT L58
L60          34663 SEA (POLYPROPYLENE# OR POLY(A)PROPYLENE#)/TI
L61           6 SEA L60 AND L59
L62          20 SEA L58 OR L61
L63          38 SEA L51 NOT L62
L64          394 SEA L6
L65          23 SEA L7
L66           0 SEA L63 AND L64 AND L65
L67          34 SEA L63 AND L64
L68           4 SEA L63 AND L65
L69          24 SEA L62 OR L68
L70          34 SEA L51 NOT L69

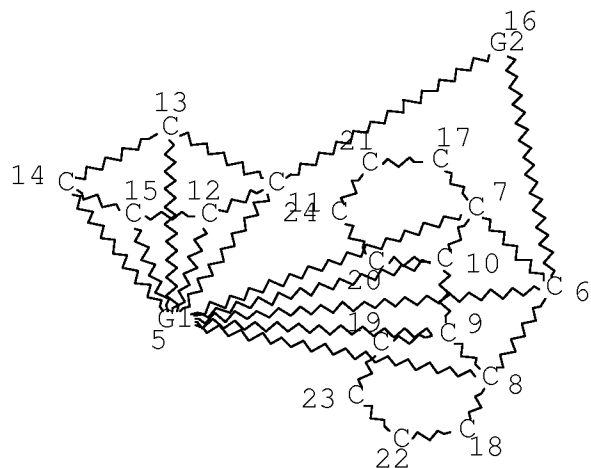
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FILE 'REGISTRY' ENTERED ON 24 APR 2009

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=> D L31 QUE STAT
L27          STR

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VAR G1=TI/HF/ZR
REP G2=(1-4) A
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM

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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L31 1440 SEA FILE=REGISTRY SSS FUL L27

100.0% PROCESSED 11097 ITERATIONS

1440 ANSWERS

SEARCH TIME: 00.00.01

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 23:17:20 ON 24 APR 2009

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=> D L50 1-16 BIB ABS HITSTR HITIND RE

L50 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2005:447050 HCAPLUS Full-text

DN 142:464835

TI Reduced cycle time processing of metallocene polypropylene by  
injection-stretch-blow moulding  
resulting in articles with improved properties

IN Smits, Valerie

PA Total Petrochemicals Research Feluy, Belg.

SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 1533102	A1	20050525	EP 2003-104212	20031114

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,

SK  
WO 2005046965 A1 20050526 WO 2004-EP52821  
200411  
05

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,  
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,  
SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,  
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,  
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL,  
PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG

EP 1682329 A1 20060726 EP 2004-818412  
200411  
05

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS  
CN 1882431 A 20061220 CN 2004-80033575

200411  
05

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JP 2007511630 T 20070510 JP 2006-538849  
200411  
05

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KR 2006132614 A 20061221 KR 2006-711591  
200606  
13

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US 20070246866 A1 20071025 US 2007-579266  
200703  
05

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PRAI EP 2003-104212 A 20031114 <--  
WO 2004-EP52821 W 20041105 <--

AB The use of metallocene-produced polypropylene to prep. single- or  
multi-layer articles by injection-stretch- blow molding with a  
reduced cycle time is described. The articles have good barrier  
properties, excellent optical properties, impact, compression and  
chem. resistance, and rigidity. The finished articles have hot-

filling capability and could be used for food or non-food applications.

IT 25085-53-4

(metallocene catalyzed; reduced cycle time processing of metallocene polypropylene by **injection-stretch-blow molding** resulting in articles with improved impact, chem. resistance, rigidity and excellent optical properties.)

RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

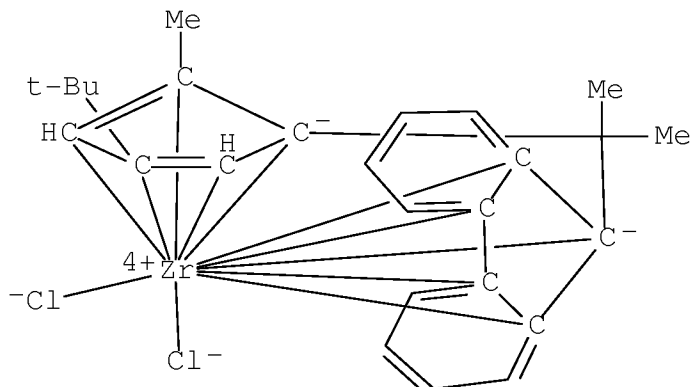


IT 217176-68-6, Isopropylidene-(3-tert-butyl-5-methyl-cyclopentadienyl)(fluorenyl) zirconium dichloride

(reduced cycle time processing of metallocene polypropylene by **injection-stretch-blow mold** .ing resulting in articles with improved impact, chem. resistance, rigidity and excellent optical properties.)

RN 217176-68-6 HCAPLUS

CN Zirconium, dichloro[ $\eta^1$ 0-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IC ICM B29C049-00  
ICS B29C049-08; B29K023-00

CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 37

ST metallocene ethylene propylene copolymer blend short cycle time  
molding; polypropylene bottle **blow molding**  
improved mech optical property

IT Food packaging  
(hot-filling; reduced cycle time processing of metallocene  
polypropylene by **injection-stretch-**  
**blow molding** resulting in articles with  
improved impact, chem. resistance, rigidity and excellent optical  
properties.)

IT Molding of plastics and rubbers  
(injection, stretch, blow; reduced cycle time processing of  
metallocene polypropylene by **injection-stretch**  
**-blow molding** resulting in articles with  
improved impact, chem. resistance, rigidity and excellent optical  
properties.)

IT Bottles  
Impact strength  
(reduced cycle time processing of metallocene polypropylene by  
**injection-stretch-blow**  
**molding** resulting in articles with improved impact, chem.  
resistance, rigidity and excellent optical properties.)

IT 25085-53-4  
(metallocene catalyzed; reduced cycle time processing of  
metallocene polypropylene by **injection-stretch**  
**-blow molding** resulting in articles with  
improved impact, chem. resistance, rigidity and excellent optical  
properties.)

IT 9010-79-1, Ethylene-propylene copolymer  
(metallocene prepd., random; reduced cycle time processing of  
metallocene polypropylene by **injection-stretch**  
**-blow molding** resulting in articles with  
improved impact, chem. resistance, rigidity and excellent optical  
properties.)

IT 217176-68-6, Isopropylidene-(3-tert-butyl-5-methyl-  
cyclopentadienyl)(fluorenyl) zirconium dichloride  
(reduced cycle time processing of metallocene polypropylene by  
**injection-stretch-blow mold**  
**ing** resulting in articles with improved impact, chem.  
resistance, rigidity and excellent optical properties.)

RE

(1) Anon; PATENT ABSTRACTS OF JAPAN 2003, V2003(09)

- (2) Basf Ag; WO 9941293 A 1999 HCAPLUS  
 (3) Forte, G; US 2001048988 A1 2001  
 (4) Japan Polychem Corp; JP 2003137245 A 2003 HCAPLUS  
 (5) Japan Polychem Corp; JP 2003138074 A 2003 HCAPLUS  
 (6) Stevens, J; WO 03040233 A 2003 HCAPLUS

L50 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2004:166286 HCAPLUS Full-text

DN 140:357771

TI Stereoblock isotactic-hemiisotactic poly(propylene)s and ethylene/propylene copolymers obtained with ansa-cyclopenta[1,2-b;4,3-b']dithiophene catalysts

AU Ewen, John A.; Jones, Robert L.; Elder, Michael J.; Camurati, Isabella; Pritzkow, Hans

CS Catalyst Research Corporation, Deerfield Beach, FL, 33442, USA

SO Macromolecular Chemistry and Physics (2004), 205(3), 302-307

CODEN: MCHPES; ISSN: 1022-1352

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

AB Stereoblock, isotactic-hemiisotactic poly(propylene) is produced with C1-sym. Me<sub>2</sub>C(η<sup>5</sup>-3-(2-adamantyl)-C<sub>5</sub>H<sub>3</sub>)(η<sup>5</sup>-C<sub>9</sub>H<sub>4</sub>S<sub>2</sub>)ZrCl<sub>2</sub>.

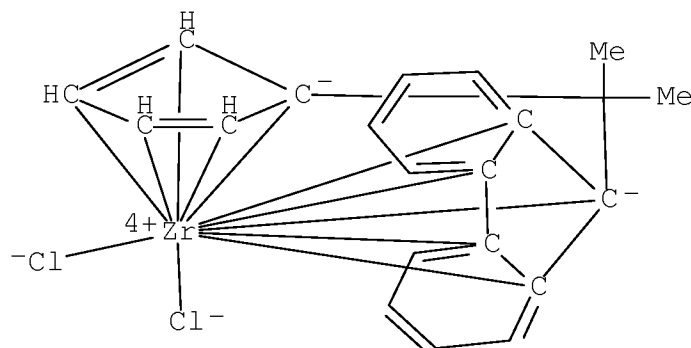
Ethylene/propylene copolymn. data with the Cs-sym. Me<sub>2</sub>C(η<sup>5</sup>-C<sub>5</sub>H<sub>4</sub>)(η<sup>5</sup>-C<sub>9</sub>H<sub>4</sub>S<sub>2</sub>)ZrCl<sub>2</sub> metallocene reveals that it is highly propylene-specific and that it produces more random ethylene/propylene copolymers than its fluorenyl analog.

IT 130638-44-7

(stereoblock isotactic-hemiisotactic poly(propylene)s and ethylene-propylene copolymers prepd. with ansa-cyclopentadiene dithiophene catalysts)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[η<sup>10</sup>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

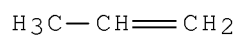


IT 9003-07-0P, Polypropylene 9010-79-1P,  
Ethylene-propylene copolymer 25085-53-4P, Isotactic  
polypropylene  
(stereoblock isotactic-hemiisotactic poly(propylene)s  
and ethylene-propylene copolymers prepd. with ansa-cyclopenta  
dithiophene catalysts)  
RN 9003-07-0 HCAPLUS  
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

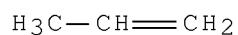


RN 9010-79-1 HCAPLUS  
CN 1-Propene, polymer with ethene (CA INDEX NAME)

CM 1

CRN 115-07-1

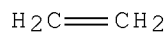
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4

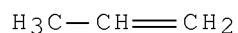


RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 75

IT ~~130638-44-7~~ 408540-59-0  
(stereoblock isotactic-hemiisotactic poly(propylene)s and  
ethylene-propylene copolymers prepd. with ansa-cyclopenta  
dithiophene catalysts)

IT ~~9003-07-0P~~, Polypropylene ~~9010-79-1P~~,  
Ethylene-propylene copolymer ~~25085-53-4P~~, Isotactic  
polypropylene 779327-97-8P  
(stereoblock ~~isotactic~~-hemiisotactic poly(propylene)s  
and ethylene-propylene copolymers prepd. with ansa-cyclopenta  
dithiophene catalysts)

RE

- (1) Busico, V; Macromolecules 1997, V30, P6251 HCAPLUS
- (2) Ewen, J; J Am Chem Soc 1984, V106, P6355 HCAPLUS
- (3) Ewen, J; J Am Chem Soc 1987, V109, P6544 HCAPLUS
- (4) Ewen, J; J Am Chem Soc 1998, V120, P10786 HCAPLUS
- (5) Ewen, J; J Am Chem Soc 2001, V123, P4763 HCAPLUS
- (6) Ewen, J; Metalorganic Catalysts for Synthesis and Polymerization  
1999, P150
- (7) Ewen, J; Sci Am 1997, V276(5), P60
- (8) Herfert, N; Makromol Chem 1993, V194, P3167 HCAPLUS
- (9) Kraak, A; Tetrahedron 1968, V24, P3381 HCAPLUS
- (10) Leclerc, M; Angew Chem, Int Ed 1998, V37, P922
- (11) Miller, S; Organometallics 2002, V21, P934 HCAPLUS
- (12) Sheldrick, G; SHELXTL V5.1 1998
- (13) Wolfsgruber, W; Makromol Chem 1975, V176, P2765
- (14) Zambelli, A; Macromolecules 1972, V5, P440 HCAPLUS
- (15) Zambelli, A; Makromol Chem, Rapid Commun 1991, V12, P523 HCAPLUS
- (16) Zambelli, A; NMR -- Basic Principles and Progress 1971, P101 HCAPLUS

L50 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2004:139252 HCAPLUS Full-text

DN 140:182439

TI Polyolefin resin compositions and **injection molded**  
articles, containers, films, and fibers therefrom with high  
mechanical strength and less flow marks

IN Kawahara, Nobuo; Kojo, Shinichi; Kashiwa, Norio

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 43 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2004051801	A	20040219	JP 2002-211616	200207 19

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PRAI JP 2002-211616 20020719 <--

AB The compns. comprise 100 parts of (A) propylene polymers (catalyzed by Mg-supported Ti catalysts or metallocene catalysts) and  $\geq 10$  parts of (B) elastomers with limiting viscosity ( $\eta$ )  $\geq 1.5$  dL/g and  $M_w/M_n$  1.0-3.5 measured by GPC. The elastomers B are (20-80):(20-80) (mol%) X-Y random copolymers [combination of X and Y = (B1) propylene (P) and ethylene (E), (B2) C4-20- $\alpha$ -olefin (OL) and E, or (B3) P and OL, resp.] having heterogeneous linkage (caused by 2,1-insertion of X; measured by  $^{13}\text{C}$ -NMR)  $\leq 1.0$  mol% of total X units, where m.p. of B3 is  $\leq 150^\circ$  or not obsd. Alternatively, the elastomers may be (B4) E-P-OL copolymers with E/OL (20-80):(20-80) (mol%) and (E + P)/OL (20-99):(1-80) (mol%) having both of heterogeneous linkage caused by 2,1-insertion of P and OL  $\leq 1.0$  mol% of total P units and OL units, resp. **Injection molded** articles from the compns. are useful for automotive parts, elec. appliances, medical goods, etc. Thus, isotactic polypropylene [mmmm 95.8%; prepd. using dimethylmethylene(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride, silica (H 121)-supported methylaluminoxane, and  $i\text{Bu}_3\text{Al}$ ] was mixed with 25:75 E-P rubber ( $\eta$  2.2 dL/g,  $M_w/M_n$  2.2, no 2,1-insertion) and **injection molded** to give a sheet showing tensile elongation  $> 500\%$ , flexural modulus 1680 MPa, Izod impact strength 55 J/m, and no flow marks.

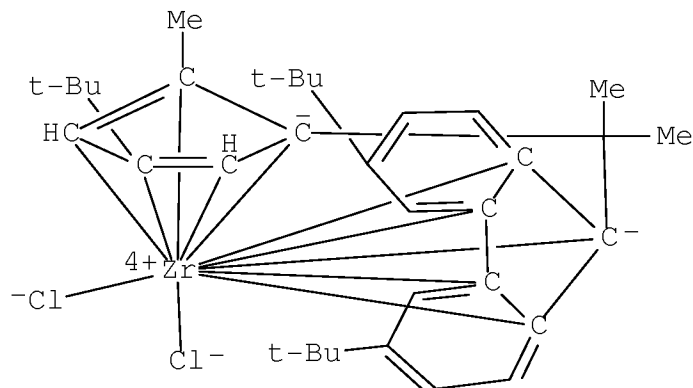
IT ~~288614-60-8P~~, Dimethylmethylene(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride

(metallocene polymn. catalysts; propylene polymer/polyolefin

rubber blends for injection molded articles,  
containers, films, and fibers with high mech. strength and less  
flow marks)

RN 288614-60-8 HCAPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]]dichloro- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(metallocene-catalyzed; propylene polymer/polyolefin rubber  
blends for injection molded articles,  
containers, films, and fibers with high mech. strength and less  
flow marks)

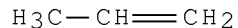
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-16

ICS C08F004-654; C08F297-08

CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38, 39, 40, 76

IT Polyolefin rubber  
((ethylene-)propylene- $\alpha$ -olefin; propylene  
polymer/polyolefin rubber blends for **injection**  
**molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT Aluminoxanes  
(Me, silica-supported, polymn. catalysts.; propylene  
polymer/polyolefin rubber blends for **injection**  
**molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT Polyolefin rubber  
(alkene-ethylene, C4-20; propylene polymer/polyolefin rubber  
blends for **injection molded** articles,  
containers, films, and fibers with high mech. strength and less  
flow marks)

IT Polymer chains  
(configuration; propylene polymer/polyolefin rubber blends for  
**injection molded** articles, containers, films,  
and fibers with high mech. strength and less flow marks)

IT Polymerization catalysts  
(metallocene; propylene polymer/polyolefin rubber blends for  
**injection molded** articles, containers, films,  
and fibers with high mech. strength and less flow marks)

IT Automobiles  
(parts; propylene polymer/polyolefin rubber blends for  
**injection molded** articles, containers, films,  
and fibers with high mech. strength and less flow marks)

IT Containers  
Electric appliances  
Medical goods  
Plastic films  
(propylene polymer/polyolefin rubber blends for **injection**  
**molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT Ethylene-propylene rubber  
(propylene polymer/polyolefin rubber blends for **injection**  
**molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT Molded plastics, properties  
Polymer blends  
(propylene polymer/polyolefin rubber blends for **injection**  
**molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT Polyolefin fibers  
(propylene polymer/polyolefin rubber blends for **injection**  
**molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT 7631-86-9, Silica, uses  
(H 121, methylaluminoxane supported with, polymn. catalysts;  
propylene polymer/polyolefin rubber blends for **injection  
molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT 7550-45-0, Titanium tetrachloride, uses  
(catalysts, supported with magnesium chloride; propylene  
polymer/polyolefin rubber blends for **injection  
molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT 9010-79-1P  
(ethylene-propylene rubber, propylene polymer/polyolefin rubber  
blends for **injection molded** articles,  
containers, films, and fibers with high mech. strength and less  
flow marks)

IT 288614-60-8P, Dimethylmethylen(3-tert-butyl-5-  
methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium  
dichloride  
(metallocene polymn. catalysts; propylene polymer/polyolefin  
rubber blends for **injection molded** articles,  
containers, films, and fibers with high mech. strength and less  
flow marks)

IT 25085-53-4P, Isotactic polypropylene  
(metallocene-catalyzed; propylene polymer/polyolefin rubber  
blends for **injection molded** articles,  
containers, films, and fibers with high mech. strength and less  
flow marks)

IT 100-99-2, Triisobutylaluminum, uses  
(polymn. catalysts; propylene polymer/polyolefin rubber blends  
for **injection molded** articles, containers,  
films, and fibers with high mech. strength and less flow marks)

IT 9003-07-0, Polypropylene 9010-79-1, Ethylene-propylene copolymer  
(propylene polymer/polyolefin rubber blends for **injection  
molded** articles, containers, films, and fibers with high  
mech. strength and less flow marks)

IT 7786-30-3, Magnesium chloride, uses  
(titanium catalysts supported with; propylene polymer/polyolefin  
rubber blends for **injection molded** articles,  
containers, films, and fibers with high mech. strength and less  
flow marks)

L50 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 2003:875323 HCAPLUS Full-text  
DN 139:338352  
TI Metallocene polypropylene for **rotomolding**  
IN Maziers, Eric; Smits, Valerie  
PA ATOFINA Research SA, Belg.

SO PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2003091295	A1	20031106	WO 2003-EP4234	200304 22

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,  
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL,  
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
NE, SN, TD, TG

EP 1357137	A1	20031029	EP 2002-76659	200204 26
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PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

AU 2003229720	A1	20031110	AU 2003-229720	200304 22
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EP 1513885	A1	20050316	EP 2003-722535	200304 22
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EP 1513885 B1 20061004

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
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SK

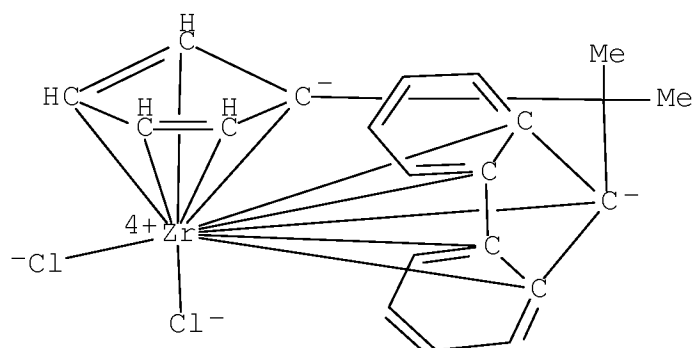
JP 2005523955	T	20050811	JP 2003-587851	200304 22
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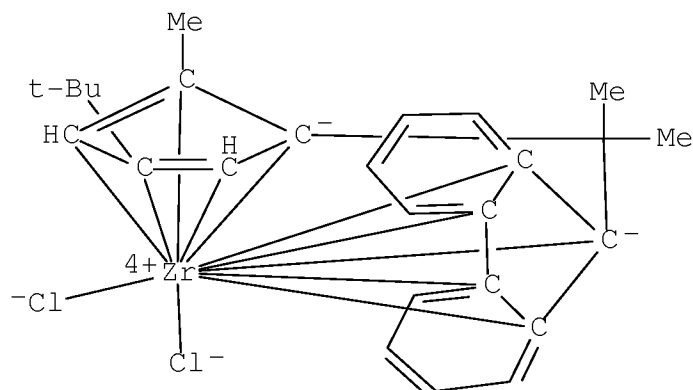
US 20050288472	A1	20051229	US 2005-512389	
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US 7193025 B2 20070320  
PRAI EP 2002-76659 A 20020426 <--  
EP 2003-75558 A 20030225 <--  
EP 2003-75559 A 20030225 <--  
WO 2003-EP4234 W 20030422 <--  
AB A single layer articles was prepd. by rotomolding metallocene-  
produced syndiotactic polypropylene or isotactic random copolymer of  
propylene. The rotomolded articles have a melt flow index of 3-40  
g/10min, transmittance >60%, shrink factor <2%, impact strength >4  
J/min, and flexural yield strength >12.5 MPa.  
IT 130638-44-7 217176-68-6  
(metallocene polypropylene for rotomolding)  
RN 130638-44-7 HCAPLUS  
CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-  
methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



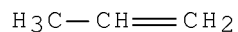
RN 217176-68-6 HCAPLUS  
CN Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-  
cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-  
(9CI) (CA INDEX NAME)



IT 25085-53-4, Isotactic propylene polymer  
 (metallocene polypropylene for rotomolding)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
 CMF C3 H6



IC ICM C08F010-06  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 ST single layer rotomolded article syndiotactic polypropylene  
 IT Impact-resistant materials  
 (metallocene polypropylene for rotomolding)  
 IT Polyolefins  
 (metallocene polypropylene for rotomolding)  
 IT Polymerization catalysts  
 (metallocene; metallocene polypropylene for rotomolding)  
 IT 130638-44-7 217176-68-6  
 (metallocene polypropylene for rotomolding)  
 IT 26063-22-9P, Syndiotactic polypropylene  
 (metallocene polypropylene for rotomolding)  
 IT 25085-53-4, Isotactic propylene polymer  
 (metallocene polypropylene for rotomolding)  
 RE

- (1) Alastalo, K; WO 0177224 A 2001 HCAPLUS  
 (2) Sumitomo Chemical Co; EP 0780431 A 1997 HCAPLUS

L50 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2003:390037 HCAPLUS Full-text

DN 138:386321

TI Stereoregular propylene polymer compositions for impact-, scratch-, and whitening-resistant materials

IN Mori, Ryoji; Kizu, Koichi; Kuroiwa, Yoshinori

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2003147135	A	20030521	JP 2001-342856	20011108

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PRAI JP 2001-342856 20011108 <--

OS MARPAT 138:386321

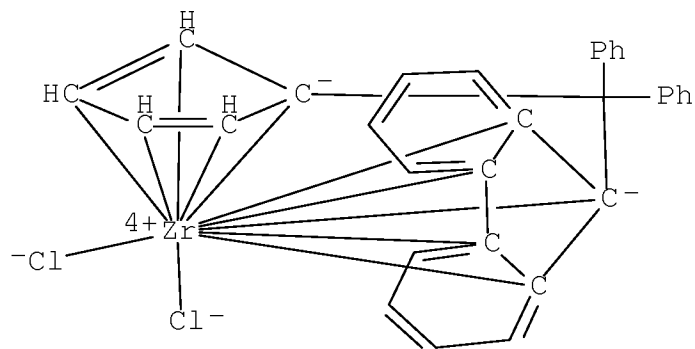
AB The compns. comprise (A) isotactic propylene polymers 30-99.8%, (B) syndiotactic propylene polymers bearing  $\geq 90$  mol% propylene unit 0.1-40%, (C) (55-90):(10-45) (mol%) syndiotactic propylene-C2-20- $\alpha$ -olefin copolymers 0.1-30% and satisfy B/C ratio 10/90-90/10. Thus, a 70:18:12 mixt. of F 337D (isotactic propylene-1-butene-ethylene copolymer), metallocene-catalyzed syndiotactic polypropylene, and metallocene-catalyzed syndiotactic ethylene-propylene copolymer was **injection molded** to give a specimen showing tensile modulus 356 MPa, Martens hardness 11 mm-1, no whitening in a 180° bending test.

IT 132510-07-7,

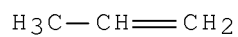
Diphenylmethylene(cyclopentadienyl)fluorenylzirconium dichloride (polymn. catalysts; stereoregular propylene polymer compns. for impact-, scratch-, and whitening-resistant materials)

RN 132510-07-7 HCAPLUS

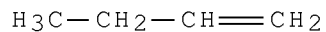
CN Zirconium, dichloro[( $\eta$ 5-2,4-cyclopentadien-1-ylidene)(diphenylmethylene)[(4a,4b,8a,9a- $\eta$ )-9H-fluoren-9-ylidene]]- (CA INDEX NAME)



IT 89917-24-8, F 337D  
 (stereoregular propylene polymer compns. for impact-, scratch-,  
 and whitening-resistant materials)  
 RN 89917-24-8 HCAPLUS  
 CN 1-Butene, polymer with ethene and 1-propene, isotactic (CA INDEX  
 NAME)  
 CM 1  
 CRN 115-07-1  
 CMF C3 H6

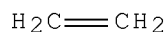


CM 2  
 CRN 106-98-9  
 CMF C4 H8



CM 3  
 CRN 74-85-1

CMF C2 H4



IC ICM C08L023-10  
ICS C08F004-645; C08K003-00; C08L023-08  
CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35  
IT 132510-07-7,  
Diphenylmethylene(cyclopentadienyl)fluorenylzirconium dichloride  
136040-19-2, Triphenylcarbenium tetrakis(pentafluorophenyl) borate  
(polymn. catalysts; stereoregular propylene polymer compns. for  
impact-, scratch-, and whitening-resistant materials)  
IT 89917-24-8, F 337D  
(stereoregular propylene polymer compns. for impact-, scratch-,  
and whitening-resistant materials)

L50 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2003:217025 HCAPLUS Full-text

DN 138:222383

TI Syndiotactic propylene polymer compositions for polymer modifiers  
and isotactic propylene polymer compositions containing them with  
good impact resistance, hardness, and moldability

IN Mori, Ryoji; Kizu, Koichi; Kuroiwa, Yoshinori

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 36 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2003082175	A	20030319	JP 2001-273896	20010910

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PRAI JP 2001-273896 20010910 <--

OS MARPAT 138:222383

AB The modifier compns. comprise (A) 5-95 parts syndiotactic propylene  
copolymers comprising 50-99 mol% syndiotactic propylene units and 1-  
50 mol% other repeating units selected from ethylene and C4-20- $\alpha$ -  
olefins and (B) 5-95 parts ethylene- $\alpha$ -olefin copolymers comprising

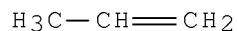
70-98 mol% ethylene units and 2-30 mol% C3-20- $\alpha$ -olefin units (A + B = 100). The syndiotactic propylene copolymers may be manufd. in the presence of metallocene catalysts. Thus, a compn. comprising metallocene-catalyzed syndiotactic propylene-ethylene copolymer and 1-butene-ethylene copolymer was kneaded with polypropylene and **injection- molded** to give a test piece showing flexural modulus 1600 MPa, Izod impact strength 70 J/m, and Rockwell hardness 93.

IT 29160-11-0P, Syndiotactic ethylene-propylene copolymer  
(metallocene-catalyzed, modifier contg.; syndiotactic propylene polymer-based modifiers for **isotactic** propylene polymers with good impact resistance, hardness, and moldability)  
RN 29160-11-0 HCAPLUS  
CN 1-Propene, polymer with ethene, syndiotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

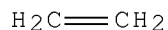
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4

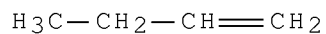


IT 25087-34-7, 1-Butene-ethylene copolymer  
(modifier contg.; syndiotactic propylene polymer-based modifiers for **isotactic** propylene polymers with good impact resistance, hardness, and moldability)  
RN 25087-34-7 HCAPLUS  
CN 1-Butene, polymer with ethene (CA INDEX NAME)

CM 1

CRN 106-98-9

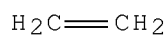
CMF C4 H8



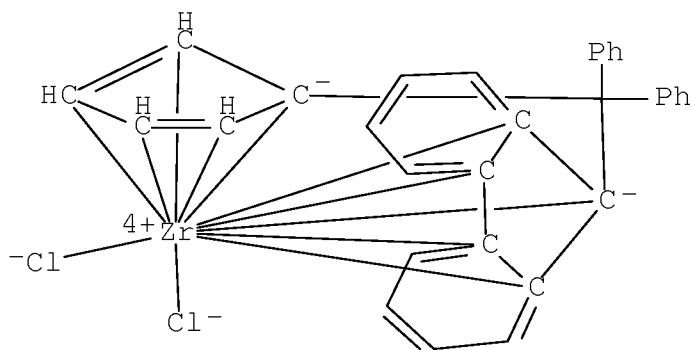
CM 2

CRN 74-85-1

CMF C2 H4



IT 132510-07-7,  
Diphenylmethylene(cyclopentadienyl)fluorenylzirconium dichloride  
(polymn. catalysts; syndiotactic propylene polymer-based  
modifiers for isotactic propylene polymers with good impact  
resistance, hardness, and moldability)  
RN 132510-07-7 HCAPLUS  
CN Zirconium, dichloro[( $\eta^5$ -2,4-cyclopentadien-1-ylidene)(diphenylmethylene)[(4a,4b,8a,9a- $\eta$ )-9H-fluoren-9-ylidene]]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
(syndiotactic propylene polymer-based modifiers for

isotactic propylene polymers with good impact resistance,  
hardness, and moldability)

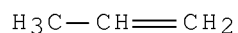
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-10

ICS C08F004-64; C08F210-06; C08L023-16; C08F210-02

CC 37-6 (Plastics Manufacture and Processing)

IT 29160-11-0P, Syndiotactic ethylene-propylene copolymer

(metallocene-catalyzed, modifier contg.; syndiotactic propylene  
polymer-based modifiers for isotactic propylene  
polymers with good impact resistance, hardness, and moldability)

IT 25087-34-7, 1-Butene-ethylene copolymer

(modifier contg.; syndiotactic propylene polymer-based modifiers  
for isotactic propylene polymers with good impact  
resistance, hardness, and moldability)

IT 100-99-2, Triisobutylaluminum, uses 132510-07-7,

Diphenylmethylenecyclopentadienylfluorenylzirconium dichloride  
136040-19-2, Triphenylcarbenium tetrakis(pentafluorophenyl)borate  
(polymn. catalysts; syndiotactic propylene polymer-based  
modifiers for isotactic propylene polymers with good impact  
resistance, hardness, and moldability)

IT 25085-53-4, Isotactic polypropylene

(syndiotactic propylene polymer-based modifiers for  
isotactic propylene polymers with good impact resistance,  
hardness, and moldability)

L50 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:736328 HCAPLUS Full-text

DN 137:264029

TI Automotive parts made of polypropylene resin composition

IN Kawai, Koji; Yamashita, Masahiro; Tohi, Yasushi; Itakura, Keita;  
Sakai, Ikunori; Hashimoto, Mikio; Minoda, Takeshi; Naito, Masamichi;  
Takaoka, Toru; Kawahara, Nobuo; Kaneyoshi, Hiromu

PA Mitsui Chemicals, Inc., Japan; Grand Polymer Co., Ltd.

SO PCT Int. Appl., 78 pp.

CODEN: PIXXD2

DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO. ----- -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
PI	WO 2002074855	A1	20020926	WO 2002-JP2186	200203 08
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	W: CN, JP, KR, US RW: DE, FR, GB EP 1302508	A1	20030416	EP 2002-703946	200203 08
				<--	
	EP 1302508 R: DE, FR, GB CN 1200034	B1 C	20060517 20050504	CN 2002-800709	200203 08
				<--	
	TW 257407	B	20060701	TW 2002-91104785	200203 14
				<--	
	US 20030187121	A1	20031002	US 2002-275903	200211 12
				<--	
	US 7081493 US 20060194914	B2 A1	20060725 20060831	US 2006-411093	200604 26
				<--	

PRAI	JP 2001-74880	A	20010315	<--
	JP 2001-74884	A	20010315	<--
	WO 2002-JP2186	W	20020308	<--
	US 2002-275903	A1	20021112	<--

AB An automotive part is made of a polypropylene resin compn. which comprises (A1) a propylene homopolymer, (B) an elastomer, and (C) an inorg. filler or which comprises (A2) a propylene block copolymer and (C) an inorg. filler and optionally contains (B) an elastomer, wherein the propylene homopolymer (A1) and the propylene homopolymer of the propylene block copolymer (A2) have a melt flow rate of 20-300 g/10 min, a proportion of irregularly positioned propylene monomer

units based on 2,1- or 1,3-insertion in all structural propylene units, as detd. from a  $^{13}\text{C}$ -NMR spectrum, being 0.2% or lower, and a ratio of wt.-av. mol. wt. to no.-av. mol. wt. being 1-3. The automotive part can be efficiently produced by injection molding.

IT 25085-53-4P 115404-65-4P

(automotive parts made of polypropylene resin compn.)

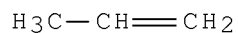
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



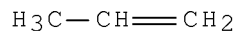
RN 115404-65-4 HCAPLUS

CN 1-Propene, polymer with ethene, isotactic, block (CA INDEX NAME)

CM 1

CRN 115-07-1

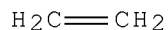
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4

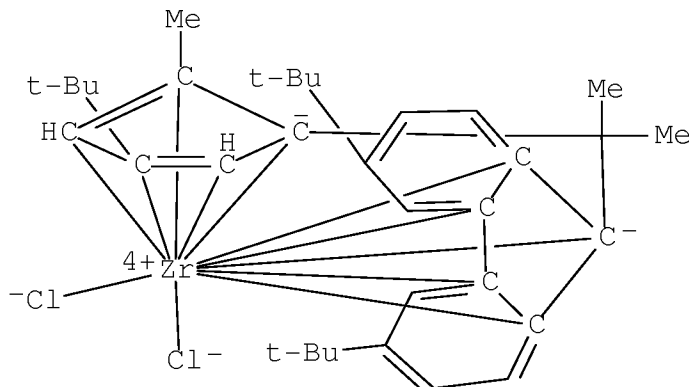


IT 288614-60-8P

(prepn. of polypropylene resin compn. for automobile parts)

RN 288614-60-8 HCAPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]]dichloro- (CA INDEX NAME)



IC ICM C08L023-10

ICS C08K003-00

CC 38-3 (Plastics Fabrication and Uses)

IT 25085-53-4P 115404-65-4P

(automotive parts made of polypropylene resin compn.)

IT 288614-60-8P

(prepn. of polypropylene resin compn. for automobile parts)

RE

- (1) Japan Polychem Corp; JP 11228759 A 1999 HCAPLUS
- (2) Japan Polychem Corp; JP 11302471 A 1999 HCAPLUS
- (3) Japan Polyolefins Co Ltd; JP 10212311 A 1998 HCAPLUS
- (4) Mitsubishi Chemical Corp; JP 11171925 A 1999 HCAPLUS
- (5) Mitsui Chemicals Ltd; JP 101573 A 1998
- (6) Sumitomo Chemical Co Ltd; DE 19927477 A1 1999 HCAPLUS
- (7) Sumitomo Chemical Co Ltd; JP 2000838 A 1999
- (8) Ube Industries Ltd; JP 09124736 A 1997 HCAPLUS
- (9) Ube Industries Ltd; JP 09165479 A 1997 HCAPLUS
- (10) Ube Industries Ltd; CA 2184523 A 1997 HCAPLUS
- (11) Ube Industries Ltd; US 5856400 A 1997 HCAPLUS
- (12) Ube Industries Ltd; AU 9664359 A 1997 HCAPLUS

L50 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:728945 HCAPLUS Full-text

DN 137:248781

TI Heat-resistant rigid transparent propylene polymer containers

IN Wada, Isao  
PA Grand Polymer K. K., Japan; Mitsui Chemicals Inc.  
SO Jpn. Kokai Tokkyo Koho, 19 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002275330	A	20020925	JP 2001-74626	20010315

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JP 3662502 B2 20050622  
PRAI JP 2001-74626 20010315 <--

OS MARPAT 137:248781

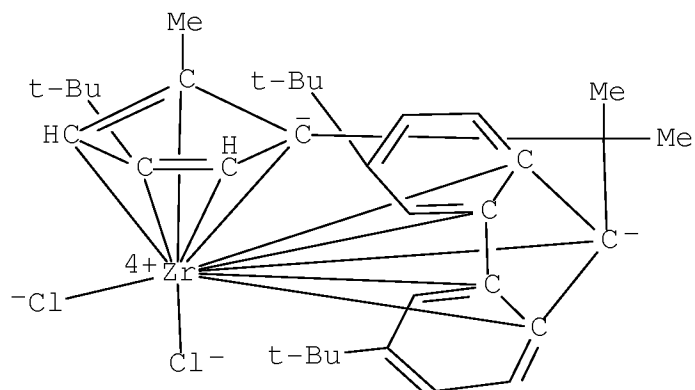
AB The containers are formed by **stretch blow molding** of resin compns. contg. 99.5-99.95% metallocene-catalyzed propylene- $\alpha$ -olefin random copolymers having melt flow rate (MFR; ASTM D 1238, 230°, 2.16 kg load) 0.5-50 g/10 min,  $\alpha$ -olefin content 0.5-5%, content of regioirregular units (based on 2,1- or 1,3-insertions, detd. from <sup>13</sup>C-NMR spectra)  $\leq$ 0.2%, and Mw/Mn (detd. by GPC) 2.5-4, and 0.05-0.5% crystal nucleating agents. Thus, propylene was copolymd. with ethylene in the presence of H, dimethylmethyle(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride (prepn. given), SiO<sub>2</sub>-supported methylaluminumoxane, and (iso-Bu)<sub>3</sub>Al to give propylene-ethylene random copolymer (A) showing T<sub>m</sub> 149°, MFR 30 g/10 min, Mw/Mn 2.1, ethylene content 1.3 mol%, n-decane-sol. fraction 0.3%, isotactic pentad (mmmm) fraction 95.0%, 2,1-insertions 0.02%, and 1,3-insertions 0.09% and copolymer (B) showing MFR 12 g/10 min. A mixt. of 100 parts compn. (Mw/Mn 2.9) contg. the copolymers A and B and 0.1 part hydroxyaluminum bis[2,2-methylenebis(4,6-di-tert-butylphenyl) phosphate] was pelletized and **stretch-blow-molded** to give a bottle showing flexural rigidity 1220 MPa, haze 10%, and dimensional change after heating of 0.05 mm.

IT 288614-60-8P

(catalyst component; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)

RN 288614-60-8 HCAPLUS

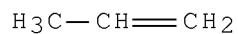
CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]]dichloro- (CA INDEX NAME)



IT 56453-76-0P, Isotactic ethylene-propylene  
copolymer  
(stretch blow-molded heat-resistant  
rigid transparent containers from metallocene-catalyzed propylene  
polymer compns.)  
RN 56453-76-0 HCAPLUS  
CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

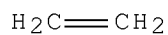
CM 1

CRN 115-07-1  
CMF C3 H6



CM 2

CRN 74-85-1  
CMF C2 H4



IC ICM C08L023-14  
ICS B29C049-08; B65D001-09; C08F004-62; C08K005-521; B29K023-00;

B29L022-00

- CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 29, 35, 37
- IT Aluminoxanes  
(Me, silica-supported, catalyst component; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT Containers  
(heat-resistant, transparent; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT Polymerization catalysts  
(metallocene; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT Bottles  
Crystal nucleating agents  
(**stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT Polymer blends  
(**stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT Molding of plastics and rubbers  
(**stretch, blow; stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT 100-99-2, Triisobutylaluminum, uses  
(catalyst component; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT 288614-60-8P  
(catalyst component; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT 19099-48-0P, 4,4'-Di-tert-butylidiphenylmethane 58775-07-8P,  
3,6-Di-tert-butylfluorene 106112-39-4P,  
2,2'-Diiodo-4,4'-di-tert-butylidiphenylmethane 150295-91-3P,  
1-tert-Butyl-3-methylcyclopentadiene 288614-69-7P 334696-50-3P  
(in prepn. of metallocene catalyst; **stretch blow-molded** heat-resistant rigid transparent containers from metallocene-catalyzed propylene polymer compns.)
- IT 67-64-1, Acetone, reactions 101-81-5, Diphenylmethane 128-37-0,  
2,6-Di-tert-butyl-4-methylphenol, reactions 677-22-5,  
tert-Butylmagnesium chloride 134014-04-3  
(in prepn. of metallocene catalyst; **stretch**

blow-molded heat-resistant rigid transparent  
 containers from metallocene-catalyzed propylene polymer compns.)  
 IT 438238-46-1, Hydroxyaluminum  
 bis[2,2-methylenebis(4,6-di-tert-butylphenyl) phosphate]  
 (nucleating agent; stretch blow-  
 molded heat-resistant rigid transparent containers from  
 metallocene-catalyzed propylene polymer compns.)  
 IT 56453-76-0P, Isotactic ethylene-propylene  
 copolymer  
 (stretch blow-molded heat-resistant  
 rigid transparent containers from metallocene-catalyzed propylene  
 polymer compns.)

L50 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:728943 HCAPLUS Full-text

DN 137:248456

TI Propylene polymer compositions containing metallocene-catalyzed  
 polymers with good moldability, impact resistance, and elongation

IN Kawai, Koji; Yamashita, Masahiro; Kawahara, Nobuo; Doi, Yasushi;  
 Kaneyoshi, Hiromu; Mori, Ryoji

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 93 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002275325	A	20020925	JP 2001-74953	20010315

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PRAI JP 2001-74953 20010315 <--

AB The compns. contain metallocene-catalyzed propylene(- $\alpha$ -olefin)  
 (homo)polymers (A1) and propylene(- $\alpha$ -olefin) (homo)polymers (A2) both  
 of which satisfy (a)  $\alpha$ -olefin content  $\leq 10$  mol%, (b) melt-flow rate  
 (MFR; at 230° and 2.16 kg load) 0.01-1000 g/10 min, MFR ratio of A1  
 to A2  $\geq 10$ , and (c) propylene monomer heterocoupling content based on  
 2,1-insertion and that based on 1,3-insertion both  $\leq 0.2\%$  (obsd. by  
 13C-NMR). Another compns. contain A1, elastomers (C), polyolefins (D)  
 with ethylene, butene, or 4-methyl-1-pentene monomer unit  $\geq 90$  mol%,  
 or polyolefins (E) graft modified with acidic monomers. Another  
 compns. contain block copolymers (B) having propylene homopolymer or  
 $\leq 10$  mol%  $\alpha$ -olefin random copolymer units and metallocene-catalyzed  
 amorphous polyolefin units, with MFR 0.01-1000 g/10 min and propylene

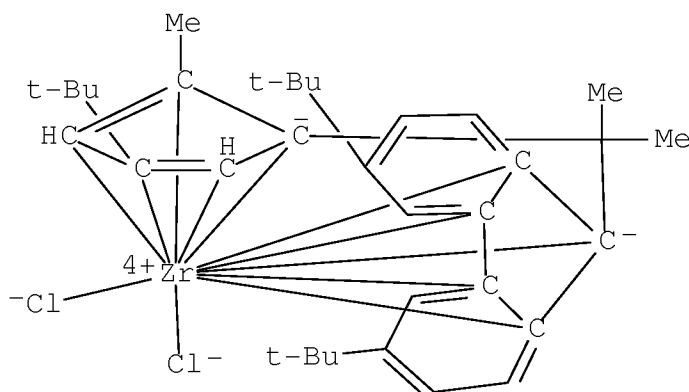
monomer heterocoupling content based on 2,1-insertion and that based on 1,3-insertion both  $\leq 0.2\%$  (obsd. by  $^{13}\text{C}$ -NMR), optionally contg. C, D, and E. Thus, 40:60 polypropylene blend [both prepd. in the presence of dimethylmethylene(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride, Me aluminoxane supported with silica, and  $\text{Al}(\text{iso-Bu})_3$  by 2-step polymn.] with MFR 50 and 60 g/10 min,  $M_w/M_n$  3.3 and 2.1, and mmmm both 95.8% was kneaded and injection-molded to give a test piece with flexural modulus 2100 MPa, Izod impact strength 20 J/m, and heat distortion temp.  $140^\circ$ .

IT 288614-60-8

(polymn. catalyst; propylene polymer compns. contg. metallocene-catalyzed stereoregular polymers with good moldability, impact resistance, and elongation)

RN 288614-60-8 HCAPLUS

CN Zirconium, [ $\eta$ 10-[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]]dichloro- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
56453-76-0P, Isotactic ethylene-propylene  
copolymer

(propylene polymer compns. contg. metallocene-catalyzed stereoregular polymers with good moldability, impact resistance, and elongation)

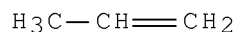
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



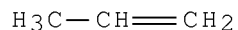
RN 56453-76-0 HCAPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

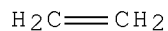
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IC ICM C08L023-10

ICS C08L023-04; C08L023-18; C08L023-26; C08L053-00; C08L101-00

CC 37-6 (Plastics Manufacture and Processing)

IT 288614-60-8

(polymn. catalyst; propylene polymer compns. contg.  
metallocene-catalyzed stereoregular polymers with good  
moldability, impact resistance, and elongation)

IT 25085-53-4P, Isotactic polypropylene

56453-76-0P, Isotactic ethylene-propylene

copolymer 106565-43-9P, Ethylene-propylene block copolymer

(propylene polymer compns. contg. metallocene-catalyzed  
stereoregular polymers with good moldability, impact resistance,  
and elongation)

L50 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:727219 HCAPLUS Full-text

DN 137:248736

TI Propylene polymer compositions and their use for impact-resistant transparent rigid containers and medical goods

IN Kawai, Koji; Wada, Isao

PA Mitsui Chemicals Inc., Japan; Grand Polymer K. K.

SO Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2002275332	A	20020925	JP 2001-74883	20010315

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	JP 3672500	B2	20050720	
PRAI	JP 2001-74883		20010315	<--

OS MARPAT 137:248736

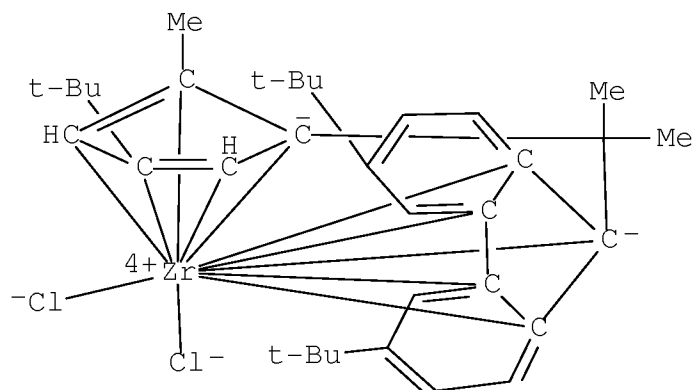
AB The compns., useful for containers and medical goods suitable for electron-beam or  $\gamma$ -ray sterilization, contain 100 parts mixts. of 70-98% metallocene-catalyzed propylene- $\alpha$ -olefin random copolymers having melt flow rate (MFR; ASTM D 1238, 230°, 2.16 kg load) 5-80 g/10 min,  $\alpha$ -olefin content 0.5-5%, content of regioirregular units (based on 2,1- or 1,3-insertions, detd. from  $^{13}\text{C}$ -NMR spectra)  $\leq 0.2\%$ , and Mw/Mn (detd. by GPC) 1-3 and 2-30% ethylene-C4-20  $\alpha$ -olefin copolymers having MFR (190°, 2.16 kg load) 0.5-40 g/10 min and d. (ASTM D 1505) 0.86-0.92 g/cm<sup>3</sup>, and 0.05-0.5 part crystal nucleating agents. Thus, propylene was copolymd. with ethylene in the presence of H, dimethylmethylene(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride (prepn. given), SiO<sub>2</sub>-supported methylaluminumoxane, and (iso-Bu)<sub>3</sub>Al to give propylene-ethylene random copolymer showing Tm 149°, MFR 30 g/10 min, Mw/Mn 2.1, ethylene content 1.3 mol%, n-decane-sol. fraction 0.3%, isotactic pentad (mmmm) fraction 95.0%, 2,1-insertions 0.02%, and 1,3-insertions 0.09%, 84.2 parts of which was pelletized with metallocene-catalyzed ethylene-1-octene copolymer 15.8, hydroxyaluminum bis[2,2-methylenebis(4,6-di-tert-butylphenyl) phosphate] 0.2 part, and other additives and ~~injection-~~ molded to give test pieces showing elongation at break 376%, flexural rigidity 1670 MPa, haze 40%, and good impact resistance.

IT 288614-60-8P

(catalyst component; metallocene-catalyzed propylene polymer compns. for impact-resistant rigid transparent containers and medical goods)

RN 288614-60-8 HCAPLUS

CN Zirconium, [ $\eta^{10}$ -(3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene)(1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]]dichloro- (CA INDEX NAME)



IT 56453-76-0P, Isotactic ethylene-propylene copolymer  
(metallocene-catalyzed propylene polymer compns. for impact-resistant rigid transparent containers and medical goods)

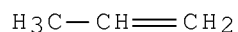
RN 56453-76-0 HCAPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4

H<sub>2</sub>C=CH<sub>2</sub>

IC ICM C08L023-14  
ICS C08F004-642; C08F210-06; C08K005-00; C08L023-14; C08L023-08  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 29, 35, 37, 63  
IT 288614-60-8P  
(catalyst component; metallocene-catalyzed propylene polymer  
compns. for impact-resistant rigid transparent containers and  
medical goods)  
IT 56453-76-0P, Isotactic ethylene-propylene  
copolymer  
(metallocene-catalyzed propylene polymer compns. for  
impact-resistant rigid transparent containers and medical goods)

L50 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 2002:727218 HCAPLUS Full-text  
DN 137:248735  
TI Propylene polymer compositions and their use for impact-resistant  
transparent thick injection moldings  
IN Kawai, Koji; Wada, Isao  
PA Mitsui Chemicals Inc., Japan; Grand Polymer K. K.  
SO Jpn. Kokai Tokkyo Koho, 20 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2002275331	A	20020925	JP 2001-74882	20010315

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JP 3672499 B2 20050720  
PRAI JP 2001-74882 20010315 <--  
OS MARPAT 137:248735  
AB The compns., useful for thick injection moldings such as toothbrush  
handles and battery containers, contain 100 parts metallocene-  
catalyzed propylene- $\alpha$ -olefin random copolymers having melt flow rate  
(MFR; ASTM D 1238, 230°, 2.16 kg load) 8-80 g/10 min,  $\alpha$ -olefin  
content 0.5-5.0%, content of regioirregular units (based on 2,1- or

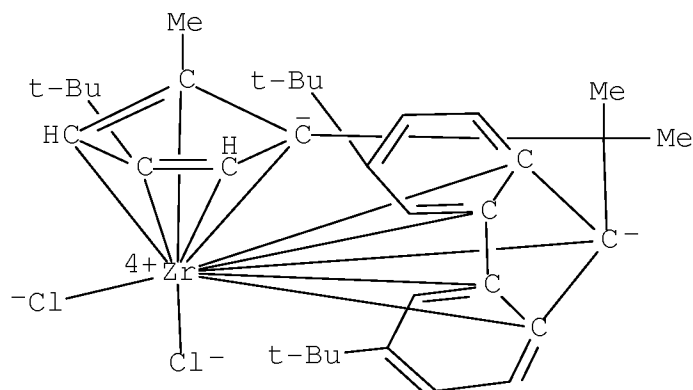
1,3-insertions, detd. from  $^{13}\text{C}$ -NMR spectra)  $\leq 0.2\%$ , and  $M_w/M_n$  (detd. by GPC) 1-3.5, and 0.05-0.5 part crystal nucleating agents. Thus, propylene was copolymd. with ethylene in the presence of H, dimethylmethylene(3-tert-butyl-5-methylcyclopentadienyl)(3,6-di-tert-butylfluorenyl)zirconium dichloride (prepn. given),  $\text{SiO}_2$ -supported methylaluminoxane, and (iso-Bu) $_3\text{Al}$  to give propylene-ethylene random copolymer showing  $T_m$   $149^\circ$ , MFR 30 g/10 min,  $M_w/M_n$  2.1, ethylene content 1.3 mol%, n-decane-sol. fraction 0.3%, isotactic pentad (mmmm) fraction 95.0%, 2,1-insertions 0.02%, and 1,3-insertions 0.09%, 100 parts of which was pelletized with 0.3 part hydroxyaluminum bis[2,2-methylenebis(4,6-di-tert-butylphenyl)phosphate] and other additives and injection-molded to give test pieces showing elongation at break 700%, flexural rigidity 1580 MPa, haze 22%, and no voids.

IT 288614-60-8P

(catalyst component; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

RN 288614-60-8 HCAPLUS

CN Zirconium, [ $\eta^{10}$ -[3,6-bis(1,1-dimethylethyl)-9H-fluoren-9-ylidene](1-methylethylidene)[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene]]dichloro- (CA INDEX NAME)



IT 56453-76-0P, Isotactic ethylene-propylene copolymer

(metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

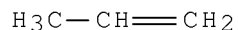
RN 56453-76-0 HCAPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

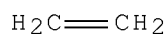
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IC ICM C08L023-14  
ICS C08F004-642; C08F210-06; C08K005-00  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 29, 35, 37, 52, 63  
ST isotactic propylene ethylene copolymer metallocene catalyst;  
transparency rigidity propylene polymer metallocene catalyst; impact  
resistance propylene polymer metallocene catalyst; nucleating agent  
phosphate propylene polymer container; **injection**  
**molding** toothbrush propylene polymer metallocene; battery  
container propylene polymer metallocene catalyst  
IT Aluminoxanes  
(Me, silica-supported, catalyst component; metallocene-catalyzed  
propylene polymer compns. for impact-resistant transparent thick  
**injection moldings**)  
IT Primary batteries  
(containers; metallocene-catalyzed propylene polymer compns. for  
impact-resistant transparent thick **injection**  
**moldings**)  
IT Transparent materials  
(impact-resistant; metallocene-catalyzed propylene polymer  
compns. for impact-resistant transparent thick **injection**  
**moldings**)  
IT Crystal nucleating agents  
(metallocene-catalyzed propylene polymer compns. for

impact-resistant transparent thick injection moldings)

IT Polymerization catalysts  
(metallocene; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT Brushes  
Dental materials and appliances  
(toothbrushes, handles; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT Containers  
(transparent, for batteries; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT Impact-resistant materials  
(transparent; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 100-99-2, Triisobutylaluminum, uses  
(catalyst component; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 288614-60-8P  
(catalyst component; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 19099-48-0P, 4,4'-Di-tert-butyl diphenylmethane 58775-07-8P,  
3,6-Di-tert-butyl fluorene 106112-39-4P,  
2,2'-Diiodo-4,4'-di-tert-butyl diphenylmethane 150295-91-3P,  
1-tert-Butyl-3-methylcyclopentadiene 288614-69-7P 334696-50-3P  
(in prepn. of metallocene catalyst; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 67-64-1, Acetone, reactions 101-81-5, Diphenylmethane 128-37-0,  
2,6-Di-tert-butyl-4-methylphenol, reactions 677-22-5,  
tert-Butylmagnesium chloride 134014-04-3  
(in prepn. of metallocene catalyst; metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 56453-76-0P, Isotactic ethylene-propylene copolymer  
(metallocene-catalyzed propylene polymer compns. for impact-resistant transparent thick injection moldings)

IT 438238-46-1, Hydroxyaluminum bis[2,2-methylenebis(4,6-di-tert-butylphenyl) phosphate]

(nucleating agent; metallocene-catalyzed propylene polymer  
compns. for impact-resistant transparent thick injection  
moldings)

L50 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 2002:671960 HCAPLUS Full-text  
DN 137:186448  
TI Metallocene catalyst-based ethylene polymer compositions for  
rotomolding  
IN Follestad, Arild; Ommundsen, Espen; Fosse, Knut  
PA Borealis Technology Oy, Finland  
SO Eur. Pat. Appl., 26 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 1236770	A1	20020904	EP 2001-301873	200103 01
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	EP 1236770	B1	20060607		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	AT 328959	T	20060615	AT 2001-301873	200103 01
				<--	
	EP 1683834	A2	20060726	EP 2006-6357	200103 01
				<--	
	EP 1683834	A3	20060913		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	ES 2260172	T3	20061101	ES 2001-301873	200103 01
				<--	
	WO 2002070602	A2	20020912	WO 2002-GB904	200203 01
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	WO 2002070602	A3	20021219		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,				

	CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2002237397	A1	20020919	AU 2002-237397	20020301
			<--	
CN 1505657	A	20040616	CN 2002-809141	20020301
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CN 1263796	C	20060712		
US 20040116608	A1	20040617	US 2004-469601	20040113
			<--	
US 7332543	B2	20080219		
US 20090004417	A1	20090101	US 2007-4059	20071220
			<--	
PRAI EP 2001-301873	A	20010301	<--	
WO 2002-GB904	W	20020301	<--	
US 2004-469601	A3	20040113	<--	
AB	A polymer compn. suitable for <b>rotomolding</b> comprises: (I) an ethylene homopolymer or copolymer with at least one other C3-10 $\alpha$ -olefin, having a melt flow rate of 0.5 to 30, Mw/Mn of less than 4, an Mw of 50,000 to 110,000, a d. of 0.940-0.970 and a m.p. of 100 to 145°; or (I) a propylene homopolymer or copolymer with at least one other C2-10 $\alpha$ -olefin, having a melt flow rate of 0.5 to 30, Mw/Mn of less than 4, an Mw of 150,000 to 300,000, and a m.p. of 100 to 170°; and (II) an ethylene homo or copolymer with at least one other C3-10 $\alpha$ -olefin, having a melt flow rate of within 40% of the melt flow rate of component (I), Mw/Mn of less than 4, an Mw of within 30% of the Mw of component (I), a d. of 0.880-0.940, said d. being at least 0.010 g/cm <sup>3</sup> less than the d. of component (I) and a m.p. of at least 5° less than that of component (I); or (II) a propylene homo or copolymer with at least one other C2-10 $\alpha$ -olefin having a melt flow rate of within 40% of the melt flow rate of component (I), Mw/Mn of less than 4, an Mw of within 30% of the Mw of component (I), and a m.p. of at least 10° less than that of component (I). A compn.			

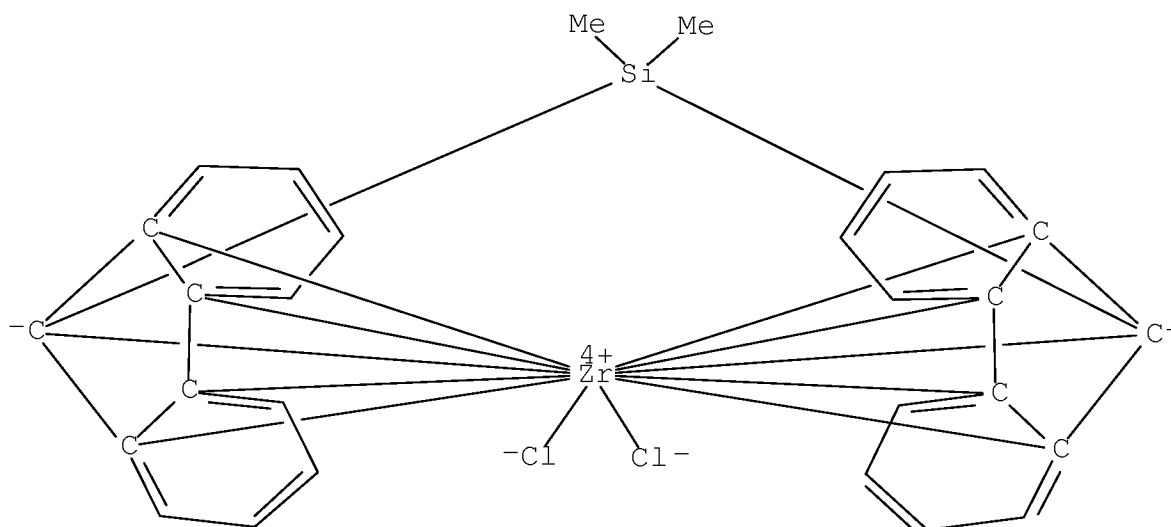
contained an ethylene homopolymer prepd. using a single site catalyst and an ethylene-hexene copolymer.

IT 148799-45-5

(metallocene catalyst-based ethylene polymer compns. for rotomolding)

RN 148799-45-5 HCAPLUS

CN Zirconium, dichloro[(dimethylsilylene)bis[(4a,4b,8a,9,9a- $\eta$ )-9H-fluoren-9-ylidene]]- (9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

(metallocene catalyst-based ethylene polymer compns. for rotomolding)

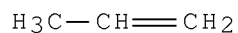
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-10

ICS C08L023-16

CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35  
ST metallocene catalyst based ethylene polymer compn  
rotomolding  
IT Aluminoxanes  
(Me; metallocene catalyst-based ethylene polymer compns. for  
rotomolding)  
IT Polymer blends  
(metallocene catalyst-based ethylene polymer compns. for  
rotomolding)  
IT Polymerization catalysts  
(metallocene; metallocene catalyst-based ethylene polymer compns.  
for rotomolding)  
IT Molding of plastics and rubbers  
(rotational; metallocene catalyst-based ethylene polymer compns.  
for rotomolding)  
IT 73364-10-0, Bis(butylcyclopentadienyl)dichlorozirconium  
143278-86-8, Rac-dimethylsilylenebis(2-methylindenylzirconium  
dichloride 148799-45-5  
(metallocene catalyst-based ethylene polymer compns. for  
rotomolding)  
IT 9002-88-4P, Ethylene homopolymer 9003-07-0P 25085-53-4P,  
Isotactic polypropylene 25213-02-9P, Ethylene-hexene  
copolymer  
(metallocene catalyst-based ethylene polymer compns. for  
rotomolding)  
IT 25087-34-7, ME8152  
(metallocene catalyst-based ethylene polymer compns. for  
rotomolding)

RE

- (1) Courtenay, J; AU 2128099 A 1999
- (2) Mitsui; JP 07309909 A 1995 HCAPLUS
- (3) Steve, C; US 6111023 A 2000 HCAPLUS

L50 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2001:283966 HCAPLUS Full-text

DN 134:296247

TI Metallocene compounds as olefin polymerization catalysts and  
manufacture of metallocene catalysts and polyolefins

IN Kawai, Koji; Yamashita, Masahiro; Tohi, Yasushi; Kawahara, Nobuo;  
Michiue, Kenji; Kaneyoshi, Hiromu; Mori, Ryoji

PA Mitsui Chemicals, Inc., Japan

SO PCT Int. Appl., 352 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

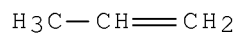
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	WO 2001027124	A1	20010419	WO 2000-JP6945	20001005
				<--	
	W: CN, JP, KR, SG, US				
	RW: BE, DE, FR, GB, IT, NL				
	EP 1138687	A1	20011004	EP 2000-964684	20001005
				<--	
	EP 1138687	B1	20070411		
	R: BE, DE, FR, GB, IT, NL				
	CN 100434433	C	20081119	CN 2000-802165	20001005
				<--	
	TW 267521	B	20061201	TW 2000-89120991	20001007
				<--	
	KR 746676	B1	20070806	KR 2001-707111	20010607
				<--	
	US 6939928	B1	20050906	US 2001-857687	20010608
				<--	
	US 20050228155	A1	20051013	US 2005-54597	20050210
				<--	
	US 7449533	B2	20081111		
	KR 2007022353	A	20070226	KR 2006-727528	20061228
				<--	
	KR 786742	B1	20071218		
PRAI	JP 1999-288838	A	19991008	<--	
	JP 1999-288839	A	19991008	<--	
	JP 1999-288840	A	19991008	<--	
	JP 2000-250387	A	20000821	<--	
	JP 2000-250390	A	20000821	<--	
	JP 2000-250391	A	20000821	<--	

	WO 2000-JP6945	W	20001005	<--
	KR 2001-707111	A3	20010607	<--
	US 2001-857687	A3	20010608	<--
OS	MARPAT 134:296247			
AB	A metallocene compd., for use as an olefin polymn. catalyst for providing isotactic polymers, has a substituted cyclopentadienyl and a (substituted) fluorenyl ligands which have been bridged with a hydrocarbon group. A process for producing the metallocene compd. is intended to selectively produce the specific metallocene compd. while avoiding the generation of an isomer by synthesizing isomer-free intermediates. Polyolefin produced by using a catalytic system including the metallocene compd. is excellent in impact resistance and transparency and has isotacticity >85%.			
IT	25085-53-4P 56453-76-0P, Ethylene propylene copolymer, isotactic (manuf. of polyolefins using metallocene compds. as olefin polymn. catalysts)			
RN	25085-53-4 HCAPLUS			
CN	1-Propene, homopolymer, isotactic (CA INDEX NAME)			

CM 1

CRN 115-07-1

CMF C3 H6

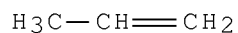


RN	56453-76-0 HCAPLUS			
CN	1-Propene, polymer with ethene, isotactic (CA INDEX NAME)			

CM 1

CRN 115-07-1

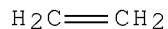
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4

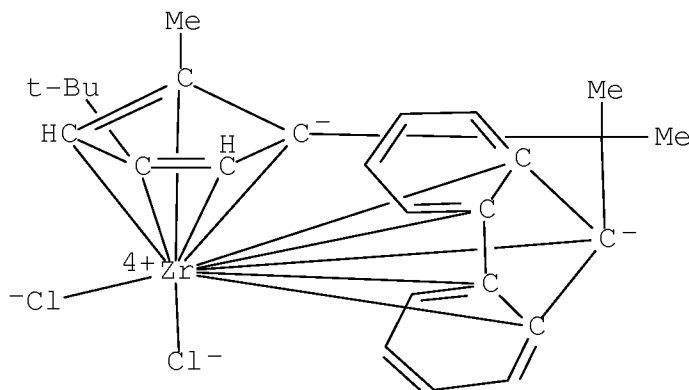


IT 217176-68-6P

(prepn. of metallocene compds. as olefin polymn. catalysts)

RN 217176-68-6 HCAPLUS

CN Zirconium, dichloro[ $\eta^{10}$ -[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IC ICM C07F017-00

ICS C08F004-64; C08F010-00; C07F007-00; C07F007-08

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 29

IT 9003-07-0P, Polypropylene 9010-79-1P, Ethylene-propylene copolymer

25085-53-4P 29160-13-2P, 1-Butene-propylene copolymer

56453-76-0P, Ethylene propylene copolymer, isotactic

(manuf. of polyolefins using metallocene compds. as olefin polymn. catalysts)

IT 217176-68-6P 288614-60-8P 288614-62-0P 288614-63-1P

288614-64-2P 334696-51-4P 334696-54-7P 334696-56-9P

334696-58-1P 334696-60-5P 334696-62-7P 334696-65-0P

334696-69-4P 334696-73-0P 334696-78-5P 334696-82-1P

334696-84-3P 334696-87-6P 334696-91-2P 334696-94-5P

334697-01-7P 334697-04-0P 334697-07-3P  
(prepn. of metallocene compds. as olefin polymn. catalysts)

RE

- (1) Alt; J Organomet Chem 1998, V568(1-2), P87 HCAPLUS
- (2) Fina Research S A; WO 200049056 A1
- (3) Fina Research S A; JP 200053724 A
- (4) Fina Research S A; EP 881236 A1 HCAPLUS
- (5) Fina Research S A; EP 965603 A1 HCAPLUS
- (6) Fina Research S A; WO 9854230 A1 1998 HCAPLUS
- (7) Fina Research S A; WO 9967309 A1 1999 HCAPLUS
- (8) Fina Research S A; WO 0049029 A1 2000 HCAPLUS
- (9) Phillips Petroleum Company; EP 1023298 A1 HCAPLUS
- (10) Phillips Petroleum Company; US 5886202 A HCAPLUS
- (11) Phillips Petroleum Company; WO 9914219 A1 1999 HCAPLUS

L50 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2000:468120 HCAPLUS Full-text

DN 133:90240

TI Polypropylene resin composition with good stiffness, impact resistance, and surface hardness

IN Mori, Ryoji; Morizono, Kenichi; Okada, Keiji

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2000191859	A	20000711	JP 1999-294963	19991018

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PRAI JP 1998-298320 A 19981020 <--

OS MARPAT 133:90240

AB Title compn. comprises (1) 30-90 wt.% of a propylene polymer having (a) limiting viscosity of 0.8-5.0 dL/g in decalin at 135°, (b) a decane-sol. content of 0.5-20 wt.% at 64°, (c) a decane-insol. content of 80-99.5 wt.% at 64°, and  $\alpha$ -olefin residue in decane-sol. fraction 0-50 mol% at 64° and (2) 10-70 wt.% of a propylene-ethylene copolymer consisting of 50-99 mol% of syndiotactic propylene residues and 1-50 mol% of ethylene residue. Thus a compn. comprised 80 parts of an isotactic ethylene-propylene block copolymer prepd. by using a Ziegler-Natta-type catalyst and 20 parts of a syndiotactic ethylene-propylene copolymer prepd. by using a metallocene catalyst and **injection molded** to give a test sample which showed flexural modulus

1100 MPa, Izod impact resistance 420 KJ/m, and surface hardness 81 HR.

IT 115404-65-4P

(polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

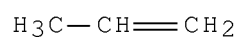
RN 115404-65-4 HCAPLUS

CN 1-Propene, polymer with ethene, isotactic, block (CA INDEX NAME)

CM 1

CRN 115-07-1

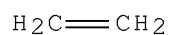
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IT 25085-53-4

(polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

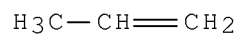
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

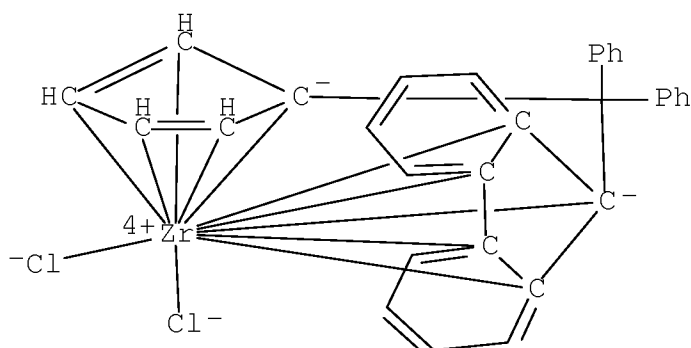


IT 132510-07-7

(prepn. of polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

RN 132510-07-7 HCAPLUS

CN Zirconium, dichloro[( $\eta^5$ -2,4-cyclopentadien-1-ylidene)(diphenylmethylene)[(4a,4b,8a,9a- $\eta$ )-9H-fluoren-9-ylidene]]- (CA INDEX NAME)



IC ICM C08L023-10

ICS C08F004-642; C08L023-16; C08L023-18; C08L053-00; C08F210-16

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 35

IT 29160-11-0P, Ethylene-propylene copolymer, syndiotactic  
115404-65-4P

(polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

IT 25085-53-4

(polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

IT 84-69-5, Diisobutyl phthalate 97-93-8, Triethylaluminum, uses  
100-99-2, uses 7550-45-0, Titanium tetrachloride, uses  
7786-30-3, Magnesium chloride, uses 126990-35-0,  
Dicyclopentyldimethoxysilane 132510-07-7 136040-19-2,  
Triphenylcarbenium tetrakis(pentafluorophenyl)borate

(prepn. of polypropylene resin compn. with good stiffness, impact resistance, and surface hardness)

L50 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1998:208734 HCAPLUS Full-text

DN 128:271502

OREF 128:53729a,53732a

TI Transparent, antistatic and antiblocking polypropylene laminate  
films for packaging of fibers  
IN Imai, Tadashi; Asanuma, Tadashi; Kimura, Shigeru; Yamada, Takayuki;  
Imabayashi, Yoshito  
PA Mitsui Toatsu Chemicals, Inc., Japan; Mitsui Chemicals Inc.  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 10086298	A	19980407	JP 1996-244414	199609 17

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JP 3654720 B2 20050602  
PRAI JP 1996-244414 19960917 <--

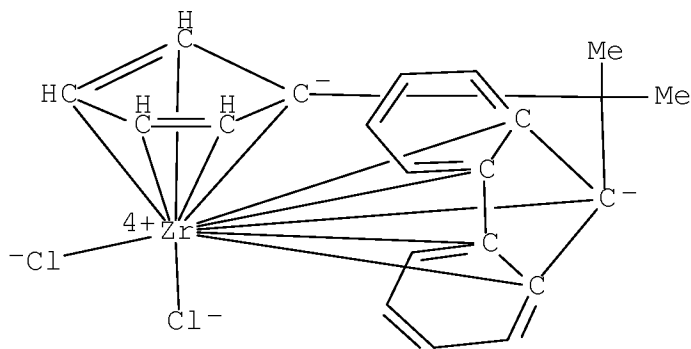
AB The laminates comprise (A) base layers with thickness at 50-95% of the total laminate thickness and made of compns. comprising cryst. propylene (I) homopolymer or I-olefin copolymers with syndiotactic pentad ratio (S)  $\geq 0.6$ , 100, ethylene-octene copolymer 25-100, and antistatic agents 0.05-0.5 part and, on both sides of A, (B) compns. comprising 100 parts isotactic polypropylenes and 0.4-1.5 parts spherical inorg. inert particles with av. particle diam. 1-10  $\mu\text{m}$ . The laminates also show good film formability and low odor after corona discharge. Thus, 100 parts syndiotactic polypropylene with S 0.793, MI 4.5 g/10 min, and polydispersity 2.4 (prepd. by using a metallocene catalyst) was blended with Engage 8452 (ethylene-octene copolymer) 50, an antioxidant 0.12, Armostat TM 310 (antistatic agent) 0.10, and Rikemal S 100A (glycerin fatty ester) 0.10 part, pelletized, and extrusion-molded with pellets (A) contg. 4.2:95.8 ethylene-I copolymer 100, an antioxidant 0.19 and SO-C 5 (SiO<sub>2</sub>) 0.5 part to give a 3-layered laminate with the A as the outer layers.

IT 130638-44-7, Isopropyl(cyclopentadienyl)(1-fluorenyl)zirconium dichloride

(for manuf. of transparent polyolefins of antistatic and antiblocking polypropylene laminated films for packaging of fibers)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 56453-76-0P, Isotactic ethylene-propylene  
copolymer  
(transparent, antistatic and antiblocking polypropylene laminate  
films for packaging of fibers)

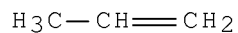
RN 56453-76-0 HCAPLUS

CN 1-Propene, polymer with ethene, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

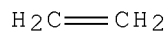
CMF C3 H6



CM 2

CRN 74-85-1

CMF C2 H4



IC ICM B32B027-32

ICS B32B027-18; B32B027-20; B65D065-40; C08K007-18; C08L023-08;  
C08L023-12

CC 38-3 (Plastics Fabrication and Uses)

IT 130638-44-7, Isopropyl(cyclopentadienyl)(1-fluorenyl)zirconium dichloride  
 (for manuf. of transparent polyolefins of antistatic and antiblocking polypropylene laminated films for packaging of fibers)

IT 26063-22-9P, Syndiotactic polypropylene 56453-76-0P, Isotactic ethylene-propylene copolymer  
 (transparent, antistatic and antiblocking polypropylene laminate films for packaging of fibers)

L50 ANSWER 16 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1997:48898 HCAPLUS Full-text

DN 126:60914

OREF 126:11955a

TI Reactor blends of small amounts of syndiotactic polypropylene in isotactic polypropylene

IN Shamsoum, Edwar S.; Reddy, Baireddy R.; Paiz, Rolando; Goins, Michael J.

PA Fina Technology, Inc., USA

SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 747430	A1	19961211	EP 1996-109107	19960607
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	EP 747430	B1	20000329		
	R: BE, DE, ES, FR, GB, IT, NL				
	US 6407177	B1	20020618	US 1995-475315	19950607
				<--	
	CA 2178419	A1	19961208	CA 1996-2178419	19960606
				<--	
	JP 09100374	A	19970415	JP 1996-168254	19960607
				<--	
	JP 3673326	B2	20050720		
	ES 2144668	T3	20000616	ES 1996-109107	

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PRAI US 1995-475315 A 19950607 &lt;--

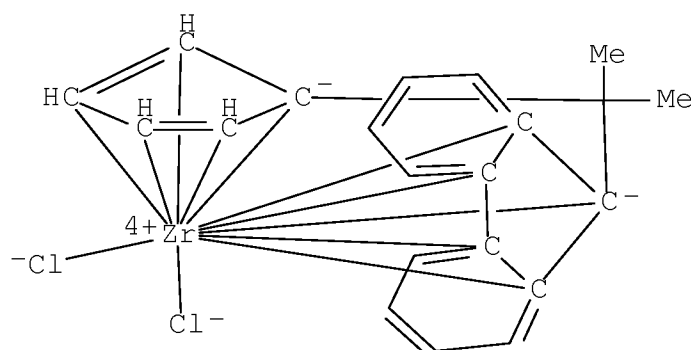
AB Polymer blends of isotactic polypropylene and syndiotactic polypropylene enhance the processability in film applications. The blends comprise a reactor blend of isotactic and syndiotactic polypropylene, wherein the process is carried out by polymg. of propylene in presence of Ziegler-Natta catalyst components, metallocene compds. supported on silica treated with an aluminoxane and organoaluminum compds. to contact each other to form activated catalysts in a reaction zone. Thus, polymn. of propylene in presence of H, triethylaluminum, triisobutylaluminum, 1:3 hexane and heptane mixt., cyclohexylmethyldimethoxysilane, Ziegler-Natta catalyst in mineral oil and diphenylmethyl(fluorenyl)(cyclopentadienyl)zirconium dichloride supported on Me aluminoxane-treated silica gave a polymer blend having mol. wt. distribution 9.0, syndiotactic polypropylene <2%, melt flow index 2.9 g/10 min and styrene soly. 3.6%.

IT 130638-44-7

(reactor blends of small amts. of syndiotactic polypropylene in isotactic polypropylene)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

26063-22-9P, Syndiotactic polypropylene

(reactor blends of small amts. of syndiotactic polypropylene in isotactic polypropylene)

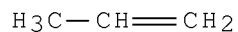
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



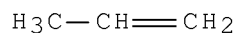
RN 26063-22-9 HCAPLUS

CN 1-Propene, homopolymer, syndiotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-00

ICS C08L023-10

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 35, 38

IT 97-93-8, Triethylaluminum, uses 100-99-2, Triisobutylaluminum,  
uses 110-54-3, Hexane, uses 142-82-5, Heptane, uses  
17865-32-6, Cyclohexylmethyldimethoxysilane 130638-44-7

(reactor blends of small amts. of syndiotactic polypropylene in  
isotactic polypropylene)

IT 25085-53-4P, Isotactic polypropylene

26063-22-9P, Syndiotactic polypropylene

(reactor blends of small amts. of syndiotactic polypropylene in  
isotactic polypropylene)

=> D L69 1-24 BIB ABS HITSTR HITIND RE

L69 ANSWER 1 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2004:857142 HCAPLUS Full-text

DN 141:332635

TI Supported metallocene catalysts and the use of such catalysts in  
 isotactic polymerization of C<3 ethylenically unsaturated monomer  
 IN Gauthier, William J.; Kerr, Margaret; Tian, Jun; Rauscher, David J.;  
 Patrick, Constance Hayworth; Henry, Shady  
 PA Fina Technology, Inc., USA  
 SO U.S. Pat. Appl. Publ., 17 pp.  
 CODEN: USXXCO

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 20040204310	A1	20041014	US 2003-412372	200304 11
				<--	
	US 6855783	B2	20050215		
	CA 2521652	A1	20041028	CA 2004-2521652	200404 07
				<--	
	WO 2004092225	A1	20041028	WO 2004-US10725	200404 07
				<--	
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP	1613665	A1	20060111	EP 2004-759233	200404 07
				<--	
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
CN	1795211	A	20060628	CN 2004-80014556	200404

JP 2007524721

T

20070830

JP 2006-509787

200404

07

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PRAI US 2003-412372 A 20030411 &lt;--

WO 2004-US10725 W 20040407 &lt;--

OS MARPAT 141:332635

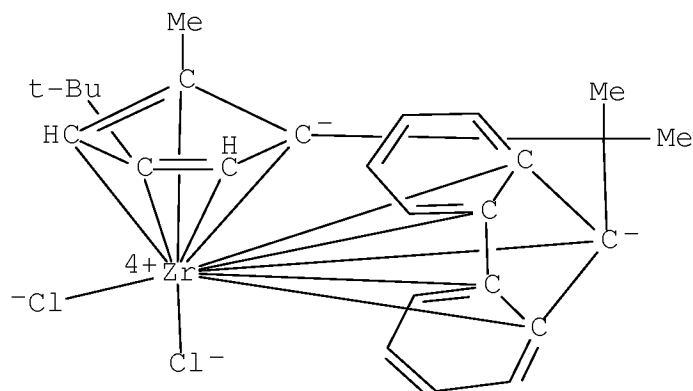
AB The supported catalysts comprise a particulate SiO<sub>2</sub> support, an alkyl alumoxane component, and a metallocene catalyst component. The support has an av. particle size 10-50  $\mu$ m, a surface area 200-800 m<sup>2</sup>/g and a pore vol. 0.9-2.1 mL/g. Alumoxane is incorporated onto the support to provide alumoxane/SiO<sub>2</sub> wt. ratio  $\geq 0.8:1$ . The catalyst is comprised of  $\geq 1\%$  SiO<sub>2</sub> and the alumoxane, and B(CpRaRb)(Fl')MQ<sub>2</sub> in which Fl' is an unsubstituted fluorenyl group or a fluorenyl group sym. substituted at the 3 and 6 positions, B is a structural bridge between Cp and Fl', Ra is a bulky substituent in a distal position, Rb is a less bulky substituent proximal to the bridge and nonvicinal to the distal substituent, M is Group IVB transition metal or V, and Q is a halogen or a C1-4-alkyl, such as isopropylidene (3-tert-Bu, 5-Me cyclopentadienyl) (3,6-ditertiary Bu fluorenyl)zirconium dichloride component.

IT 217176-68-6

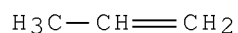
(supported bridged cyclopentadienyl-fluorenyl metallocene complex catalysts in isotactic polymn. of)

RN 217176-68-6 HCAPLUS

CN Zirconium, dichloro[ $\eta^1$ 0-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(supported bridged cyclopentadienyl-fluorenyl metallocene complex  
catalysts in isotactic polymn. of)  
RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
  
CM 1  
  
CRN 115-07-1  
CMF C3 H6



IC ICM B01J031-00  
ICS C08F004-44  
INCL 502103000; 526129000; 526943000; 526160000; 526351000; 526352000;  
502152000; 556011000; 556027000; 556043000  
CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 67  
IT 217176-68-6 773080-47-0  
(supported bridged cyclopentadienyl-fluorenyl metallocene complex  
catalysts in isotactic polymn. of)  
IT 25085-53-4P, Isotactic polypropylene  
(supported bridged cyclopentadienyl-fluorenyl metallocene complex  
catalysts in isotactic polymn. of)  
RE  
(1) Anon; EP 0881236 A1 1998 HCAPLUS  
(2) Burkhardt; US 6414095 B1 2002 HCAPLUS  
(3) Elder; US 5155080 A 1992 HCAPLUS  
(4) Ewen; US 4522982 A 1985  
(5) Ewen; US 4767735 A 1988 HCAPLUS  
(6) Ewen; US 4794096 A 1988 HCAPLUS  
(7) Ewen; US 5036034 A 1991 HCAPLUS  
(8) Ewen; US 5459117 A 1995 HCAPLUS  
(9) Irani; US 5146228 A 1992  
(10) Razavi; US 5334677 A 1994 HCAPLUS  
(11) Razavi; US 6515086 B1 2003 HCAPLUS  
(12) Reddy; US 5945365 A 1999 HCAPLUS  
(13) Shamshoum; US 5968864 A 1999 HCAPLUS  
(14) Sinn; US 4404344 A 1983 HCAPLUS  
(15) Zenk; US 5451649 A 1995 HCAPLUS

AN 2004:847584 HCAPLUS Full-text  
 DN 141:332634  
 TI Production method of propylene copolymers and films therefrom  
 IN Ikenaga, Shigenobu; Okada, Keiji; Takayasu, Hiroshi; Inoue,  
 Norihide; Hirota, Naritoshi; Kaneyoshi, Hiromu; Funaya, Munehito;  
 Kawai, Koji; Kawahara, Nobuo; Kojoh, Shinichi; Kashiwa, Norio; Mori,  
 Ryoji  
 PA Mitsui Chemicals, Inc., Japan  
 SO PCT Int. Appl., 212 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2004087775	A1	20041014	WO 2003-JP16972	200312 26
				<--	
	W: AU, CN, JP, KR, SG, US				
	RW: BE, DE, FR, GB, IT				
	AU 2003292690	A1	20041025	AU 2003-292690	200312 26
				<--	
	AU 2003292690	B2	20081120		
	EP 1614699	A1	20060111	EP 2003-768331	200312 26
				<--	
	EP 1614699	B1	20081015		
	R: BE, DE, FR, GB, IT				
	CN 1759128	A	20060412	CN 2003-80110217	200312 26
				<--	
	EP 1985637	A1	20081029	EP 2008-11463	200312 26
				<--	
	R: BE, DE, FR, GB, IT				
	EP 1985638	A1	20081029	EP 2008-11465	200312 26
				<--	
	R: BE, DE, FR, GB, IT				

EP 1988104	A1	20081105	EP 2008-11464	200312 26
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R: BE, DE, FR, GB, IT US 20060276607	A1	20061207	US 2006-550017	200606 29
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US 7488789 US 20080292896	B2 A1	20090210 20081127	US 2008-185566	200808 04
			<--	
US 20080306234	A1	20081211	US 2008-185543	200808 04
			<--	
US 20080306219	A1	20081211	US 2008-185562	200808 04
			<--	
US 20080312461	A1	20081218	US 2008-185555	200808 04
			<--	
US 20090043050	A1	20090212	US 2008-185547	200808 04
			<--	
AU 2009200064	A1	20090205	AU 2009-200064	200901 07
			<--	
AU 2009200066	A1	20090205	AU 2009-200066	200901 07
			<--	
AU 2009200068	A1	20090205	AU 2009-200068	200901 07
			<--	
PRAI JP 2003-90161	A	20030328	<--	
AU 2003-292690	A3	20031226	<--	
EP 2003-768331	A3	20031226	<--	
WO 2003-JP16972	W	20031226	<--	
US 2006-550017	A3	20060629		

OS MARPAT 141:332634

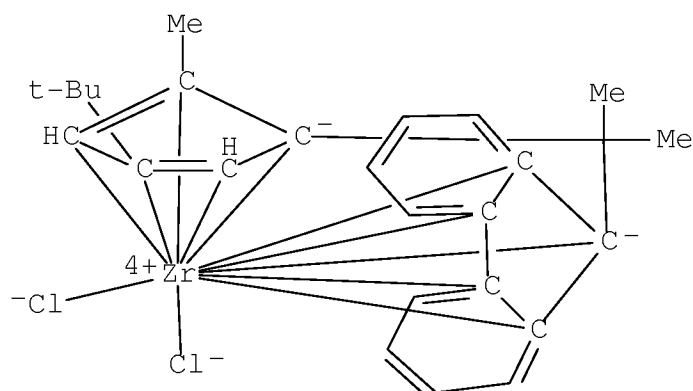
AB The invention provides a propylene/1-butene random copolymer excellent in flexibility, impact resistance, heat resistance, and low-temp. heat sealability; a polypropylene compn. contg. the copolymer; sheet made from the compn.; and composite films each comprising a (stretched) film and a layer made from the above compn. The copolymer comprises 60 to 90 mol % of propylene units and 10 to 40 mol % of 1-butene units and has a triad isotacticity 85-97.5 %, a mol. wt. distribution (Mw/Mn) 1-3, a limiting viscosity 0.1-12 dL/g, and a m.p. (Tm) 40-120°, and Tm and 1-butene unit content (M mole %) satisfying the relationship:  $146\exp(-0.022M) \geq Tm \geq 125\exp(-0.032M)$ . The invention also provides transition metal compds. useful as the catalyst component for olefin polymn., and catalysts for olefin polymn. contg. the transition metal compds.

IT 217176-68-6

(prodn. method of propylene copolymers and films therefrom)

RN 217176-68-6 HCAPLUS

CN Zirconium, dichloro[ $\eta^{10}$ -[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

(prodn. method of propylene copolymers and films therefrom)

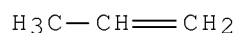
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F210-06  
ICS C08L023-10; C08J005-18; C07C017-00; C08F004-64; B32B027-32;  
C08F210-08; C07F007-00

CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 39

IT 97-93-8, Triethylaluminum, uses 100-99-2, Triisobutylaluminum,  
uses ~~217176-68-6~~ 773081-83-7  
(prodn. method of propylene copolymers and films therefrom)

IT 9002-88-4P, Polyethylene 9010-79-1P, Ethylene-propylene copolymer  
~~25085-53-4P~~, Isotactic polypropylene  
(prodn. method of propylene copolymers and films therefrom)

RE

- (1) Fina Research S A; WO 0049029 A1 2002 HCAPLUS
- (2) Fina Research S A; CN 1346373 A 2002
- (3) Fina Research S A; JP 2002510358 A 2002
- (4) Fina Research S A; US 6515086 B1 2002 HCAPLUS
- (5) Grand Polymer Co Ltd; JP 200349044 A 2003
- (6) Mitsui Chemicals Inc; JP 2000198892 A 2000 HCAPLUS
- (7) Mitsui Chemicals Inc; WO 0127124 A1 2001 HCAPLUS
- (8) Mitsui Chemicals Inc; EP 1138687 A1 2001 HCAPLUS
- (9) Mitsui Chemicals Inc; CN 1327448 A 2001
- (10) Mitsui Chemicals Inc; KR 2001086089 A 2001
- (11) Mitsui Petrochemical Industries Ltd; JP 62-119212 A 1987 HCAPLUS
- (12) Mitsui Petrochemical Industries Ltd; JP 08-208909 A 1996 HCAPLUS
- (13) Mitsui Petrochemical Industries Ltd; JP 08-283343 A 1996 HCAPLUS
- (14) Mitsui Petrochemical Industries Ltd; CN 1139130 A 1996 HCAPLUS
- (15) Mitsui Petrochemical Industries Ltd; KR 190429 B1 1996 HCAPLUS
- (16) Mitsui Petrochemical Industries Ltd; US 5998039 A 1996 HCAPLUS
- (17) Mitsui Petrochemical Industries Ltd; EP 716121 A1 1996 HCAPLUS
- (18) Sumitomo Chemical Co Ltd; JP 08-176218 A 1996 HCAPLUS
- (19) Sumitomo Chemical Co Ltd; US 5830968 A 1996 HCAPLUS
- (20) Sumitomo Chemical Co Ltd; SG 63595 A1 1996
- (21) Sumitomo Chemical Co Ltd; EP 669348 A1 1996 HCAPLUS
- (22) The Board Of Trustees Of The Leland Stanford; US 6184317 B1 1999  
HCAPLUS
- (23) The Board Of Trustees Of The Leland Stanford; US 6380125 B1 1999  
HCAPLUS
- (24) The Board Of Trustees Of The Leland Stanford; WO 9902569 A1 1999  
HCAPLUS
- (25) Vormak, M; JP 37-8483 B1 1962

L69 ANSWER 3 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2004:409979 HCAPLUS Full-text

DN 140:407540

TI Manufacture of olefin graft copolymers useful as polymer blend compatibilizers

IN Machida, Shuji; Shiguma, Haruo

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 83 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2004143436	A	20040520	JP 2003-330279	200309 22

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PRAI JP 2002-289522 A 20021002 <--

OS MARPAT 140:407540

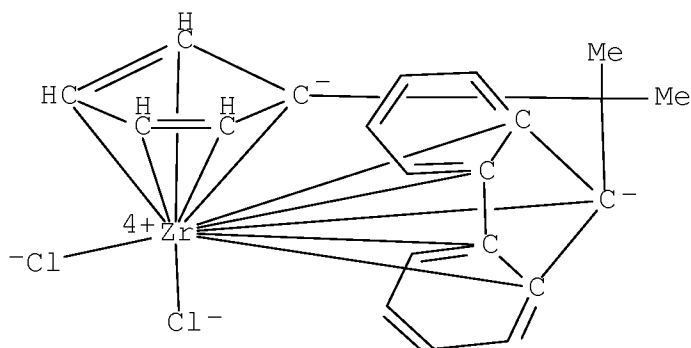
AB Title copolymers are prepd. by polymg. (A1) C<sub>2</sub>H<sub>4</sub>, C<sub>3</sub>-20  $\alpha$ -olefins, cyclic olefins, and/or styrene and (A2) polyenes in the presence of (B1) Group III-X element-, actinoid-, and/or lanthanoid-contg. major catalyst components and (B2) co-catalysts selected from aluminoxanes, transition metal compd.-reacted ionic compd.-based ionization agents, Lewis acids, clay (minerals), ion-exchanged layered compds., Group I-III or Group XI-XIII alkyl metal compds. to form polyolefins, then washing to remove unused polyenes, and further polymg. more A1 monomers. Polymg. 1,9-decadiene and C<sub>3</sub>H<sub>6</sub> in the presence of Al(iso-Bu)<sub>3</sub>, SiO<sub>2</sub>-supported methylaluminoxane, and rac-dimethylsilanediyl-bis-1-(2-methyl-4-phenylindenyl) ZrCl<sub>2</sub>, washed, and further polymg. with C<sub>2</sub>H<sub>4</sub> in presence of isopropenylcyclopentadienylfluorenyl ZrCl<sub>2</sub> and Al(iso-Bu)<sub>3</sub> gave a graft copolymer with  $[\eta]$  2.1 dL/g and polydispersity 6.5, and p-xylene-insol. gel content 0.5%. A 0.01% Irganox 1010-added blend of F 704NP 33.75, Xarec 13-ZC 9, p-3-butenyl-styrene-propene-styrene graft copolymer (I) 2.25 g was hot-pressed and punched to form a test piece with tensile modulus 1,700 MPa and break elongation 140%; vs., 1,510 and 14, resp., for a I-free blend.

IT 130638-44-7

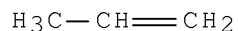
(manuf. of polyene-olefin graft copolymers as compatibilizers for polymer blends for high mech. strength)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

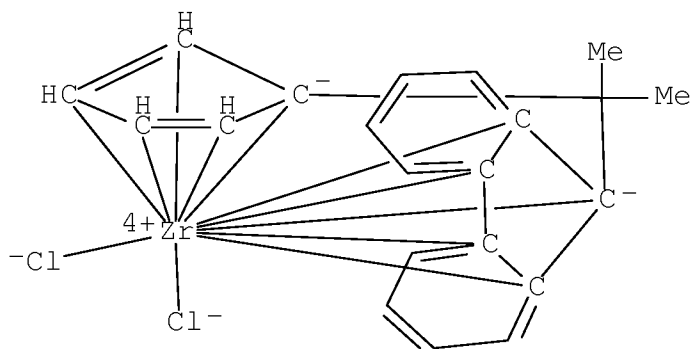


IT 25085-53-4, Polypro F 704NP  
 (manuf. of polyene-olefin graft copolymers as compatibilizers for  
 polymer blends for high mech. strength)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
 CM 1  
 CRN 115-07-1  
 CMF C3 H6



IC ICM C08F291-00  
 ICS C08F004-64  
 CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 67  
 IT 96-10-6, Diethylaluminum chloride, uses 100-99-2, Triisobutyl  
 aluminum, uses 7705-07-9, Titanium trichloride, uses  
 126990-35-0, Dicyclopentyldimethoxysilane 130638-44-7  
 153882-67-8  
 (manuf. of polyene-olefin graft copolymers as compatibilizers for  
 polymer blends for high mech. strength)  
 IT 25085-53-4, Polypro F 704NP 28325-75-9, Xarec 130ZC  
 (manuf. of polyene-olefin graft copolymers as compatibilizers for  
 polymer blends for high mech. strength)  
 L69 ANSWER 4 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2003:995162 HCAPLUS Full-text

DN 140:236142  
 TI The detailed analysis of the vinylidene structure of  
 metallocene-catalyzed **polypropylene**  
 AU Kawahara, Nobuo; Kojoh, Shin-ichi; Toda, Yoshihisa; Mizuno, Akira;  
 Kashiwa, Norio  
 CS R and D Center, Mitsui Chemicals, Inc., Chiba-ken, Sodegaura-shi,  
 299-0265, Japan  
 SO Polymer (2004), 45(2), 355-357  
 CODEN: POLMAG; ISSN: 0032-3861  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 AB The vinylidene structures in polypropylene produced by  
 ethylenebis(indenyl)zirconium dichloride (a) and  
 isopropyl(cyclopentadienyl)(fluorenyl)zirconium dichloride (b), were  
 analyzed by  $^1\text{H}$  NMR. The vinylidene group adjacent to the chain end  
 was clearly distinguished from other internal vinylidene structures  
 for the first time using 1,2-dichlorobenzene as solvent. The  
 polypropylene produced by 2 had much internal vinylidene groups  
 compared with one by (a).  
 IT 130638-44-7, Zirconium  
 dichloro[ $\eta^{10}$ -2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-  
 fluoren-9-ylidene]-  
 (polymn. catalyst, metallocene; vinylidene structure of  
 metallocene catalyzed polypropylene)  
 RN 130638-44-7 HCAPLUS  
 CN Zirconium, dichloro[ $\eta^{10}$ -2,4-cyclopentadien-1-ylidene(1-  
 methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



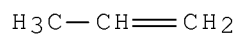
IT 25085-53-4P  
 (vinylidene structure of metallocene catalyzed polypropylene)  
 RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)

IT 112243-78-4, Ethylenebis(indenyl)zirconium dichloride

~~130638-44-7~~, Zirconium

dichloro[η10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]-

(polymn. catalyst, metallocene; vinylidene structure of metallocene catalyzed polypropylene)

IT 9003-07-0P, Polypropylene ~~25085-53-4P~~

(vinylidene structure of metallocene catalyzed polypropylene)

RE

- (1) Carvill, A; Macromolecules 1998, V30, P3783
- (2) Dang, V; Organometallics 1999, V18, P3781 HCAPLUS
- (3) Ewen, J; J Am Chem Soc 1988, V110, P6255 HCAPLUS
- (4) Fu, P; J Am Chem Soc 1995, V117, P7157 HCAPLUS
- (5) Kojoh, S; Polym J 1999, V31, P332 HCAPLUS
- (6) Lu, B; Macromolecules 1999, V32, P8678 HCAPLUS
- (7) Resconi, L; J Am Chem Soc 1998, V120, P2308 HCAPLUS
- (8) Rieger, B; J Mol Catal 1993, V82, P67 HCAPLUS
- (9) Schaverien, C; Organometallics 2001, V20, P3436 HCAPLUS
- (10) Shiono, T; Macromolecules 1992, V25, P3356 HCAPLUS
- (11) Shiono, T; Macromolecules 1997, V30, P5997 HCAPLUS
- (12) Tsutsui, T; Polymer 1989, V30, P428 HCAPLUS
- (13) Weng, W; Macromol Rapid Commun 2000, V2, P1103
- (14) Yanjarappa, M; Prog Polym Sci 2002, V27, P1347 HCAPLUS

L69 ANSWER 5 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:921386 HCAPLUS Full-text

DN 138:5109

TI Thermoplastic resin compositions, their moldings, styrene-based compatibilizers therefor, and preparation thereof

IN Machida, Shuji; Yokota, Kiyohiko; Sato, Kazuo; Takarazaki, Tatsuya

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 51 pp.

CODEN: JKXXAF

DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO. ----- -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
PI	JP 2002348342	A	20021204	JP 2001-156448	200105 25

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PRAI JP 2001-156448 20010525 <--

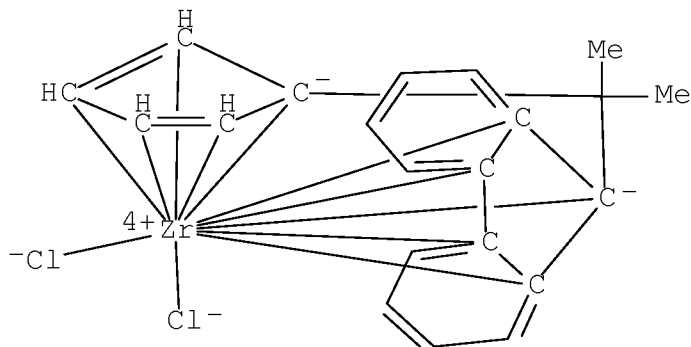
AB The compatibilizers comprise diblock structure having styrene (deriv.)-derived polymer blocks and ethylene-, styrene-, C3-20  $\alpha$ -(cyclo)olefin-, and/or their deriv.-derived polymer blocks where monomer species, stereoregularity, and/or compn. is different in the two blocks. The diblock copolymers (i) have macromonomer-derived graft chains or (ii) satisfy author's specified soly. difference between the two polymer blocks. The compatibilizers are prepd. in the presence of combined stereospecific catalyst systems that essentially contain compds. of Group IIIB-VIII metals, actinides, and/or lanthanides. The compns. contain 0.01-30% the compatibilizers. Thus, styrene was polymd. with propylene in the presence of Al(iso-Bu)<sub>3</sub>, Me aluminoxane, AlMe<sub>3</sub>, rac-dimethylsilylene(2-methyl-4-benzoindenyl)zirconium dichloride to give a stereoblock copolymer showing high compatibilizing activity to 17:83 (%) blend of syndiotactic polypropylene and low-isotactic polypropylene.

IT 130638-44-7

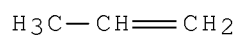
(combined catalyst systems; stereospecific styrene-based compatibilizers having macromonomer-derived graft chains for thermoplastic resin blends)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
(stereospecific styrene-based compatibilizers having  
macromonomer-derived graft chains for thermoplastic resin blends)  
RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
  
CM 1  
  
CRN 115-07-1  
CMF C3 H6



IC ICM C08F297-06  
ICS C08F004-606; C08L101-00; C08L053-00  
CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35, 38  
IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses  
130638-44-7 150995-51-0,  
Rac-dimethylsilylenebis(2-methyl-4,5-benzoindeny) zirconium  
dichloride  
(combined catalyst systems; stereospecific styrene-based  
compatibilizers having macromonomer-derived graft chains for  
thermoplastic resin blends)  
IT 9002-88-4, HD 440M 25085-53-4, Isotactic polypropylene  
26063-22-9, Syndiotactic polypropylene 26221-73-8, FM 1570  
28325-75-9, Syndiotactic polystyrene  
(stereospecific styrene-based compatibilizers having  
macromonomer-derived graft chains for thermoplastic resin blends)  
  
L69 ANSWER 6 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 2002:918263 HCAPLUS Full-text  
DN 138:5101  
TI Thermoplastic resin compositions, their moldings, olefin-based  
compatibilizers therefor, and preparation thereof  
IN Machida, Shuji; Yokota, Kiyohiko; Sato, Kazuo; Hozaki, Tatsuya  
PA Idemitsu Petrochemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 57 pp.  
CODEN: JKXXAF  
DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
PI	JP 2002348343	A	20021204	JP 2001-159028	20010528

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PRAI JP 2001-159028 20010528 <--

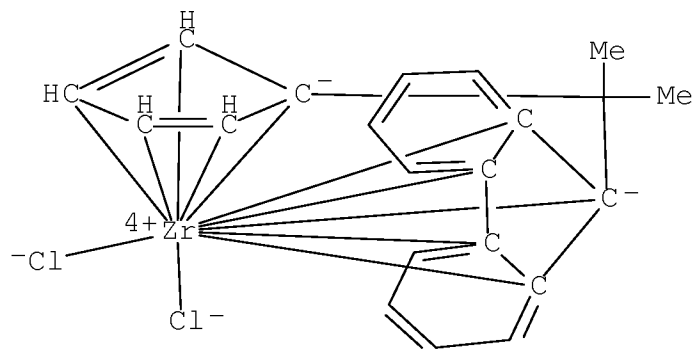
AB The compatibilizers comprise diblock copolymers of ethylene, styrene, C3-20  $\alpha$ -(cyclo)olefins, and/or their derivs. where monomer species, stereoregularity, and/or compns. is different in different polymer block. The diblock copolymers (i) have macromonomer-derived graft chains, (ii) exhibit meso- or racemic pentad fraction [mmmm] or [rrrr] 35-100%, or (iii) satisfy author's specified soly. difference between the two polymer blocks. The compatibilizers are prep'd. in the presence of combined stereospecific catalyst systems that essentially contain compds. of Group IIIB-VIII metals, actinides, and/or lanthanides. The compns. contain 0.01-30% the compatibilizers. Thus, propylene was polymd. in the presence of Al(iso-Bu)<sub>3</sub>, Me aluminoxane, AlMe<sub>3</sub>, (1,2'-dimethylsilylene)(2,1'-dimethylsilylene)(3- trimethylsilylmethyleneindenyl)zirconium dichloride, and isopropylidene(cyclopentadienyl)(fluorenyl)dichlorozirconium to give stereoblock stereograft polypropylene showing high compatibilizing activity to 17:83 (%) blend of syndiotactic polypropylene and low-isotactic polypropylene.

IT 130638-44-7, Isopropylidene(Cyclopentadienyl)(9-fluorenyl)zirconium dichloride

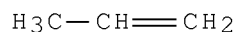
(combined catalyst systems; stereospecific olefin-based compatibilizers having macromonomer-derived graft chains for thermoplastic resin blends)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
 (stereospecific olefin-based compatibilizers having  
 macromonomer-derived graft chains for thermoplastic resin blends)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
 CM 1  
 CRN 115-07-1  
 CMF C3 H6



IC ICM C08F297-06  
 ICS C08F004-606; C08L101-00; C08L053-00  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 35, 38  
 IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses  
 130638-44-7, Isopropylidene(Cyclopentadienyl)(9-  
 fluorenyl)zirconium dichloride 135539-57-0 215051-05-1  
 220036-58-8, (1,2'-Dimethylsilylene)(2,1'-  
 dimethylsilylene)bis(indenyl)hafnium dichloride 332172-16-4,  
 (1,2'-Dimethylsilylene)(2,1'-dimethylsilylene)bis(3-  
 trimethylsilylmethyleneindenyl)zirconium dichloride  
 (combined catalyst systems; stereospecific olefin-based  
 compatibilizers having macromonomer-derived graft chains for  
 thermoplastic resin blends)  
 IT 9002-88-4, HD 440M 25085-53-4, Isotactic polypropylene  
 26063-22-9, Syndiotactic polypropylene  
 (stereospecific olefin-based compatibilizers having

macromonomer-derived graft chains for thermoplastic resin blends)

L69 ANSWER 7 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:918261 HCAPLUS Full-text

DN 138:5100

TI Thermoplastic resin compositions, their moldings, olefin-based compatibilizers therefor, and preparation thereof

IN Machida, Shuji; Yokota, Kiyohiko; Sato, Kazuo; Hozaki, Tatsuya

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 59 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002348336	A	20021204	JP 2001-159027	20010528

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PRAI JP 2001-159027 20010528 <--

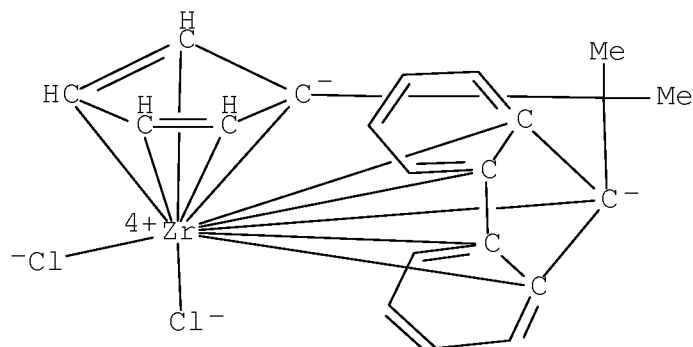
AB The compatibilizers comprise diblock copolymers of ethylene, styrene, C3-20  $\alpha$ -(cyclo)olefins, and/or their derivs. where monomer species, stereoregularity, and/or compns. is different in different polymer block. The diblock copolymers (i) have grafted polyene chains or (ii) contain trace amt. of polyenes to satisfy author's specified soly. difference between the two polymer blocks. The compatibilizers are prepd. in the presence of combined stereospecific catalyst systems that essentially contain compds. of Group IIIB-VIII metals, actinides, and/or lanthanides. The compns. contain 0.01-30% the compatibilizers. Thus, 1,9-decadiene was prepolymd. in the presence of Al(iso-Bu)<sub>3</sub> and Me aluminoxane and then further polymd. with propylene in the presence of (1,2'-dimethylsilylene)(2,1'-dimethylsilylene)(3-trimethylsilylmethyleneindenyl)zirconium dichloride, and isopropylidene(cyclopentadienyl)(fluorenyl)dichlorozirconium to give a copolymer having low-isotactic polypropylene-co-syndiotactic polypropylene backbone and poly(1,9-decadiene) graft chain and showing high compatibilizing activity to 17:83 (%) blend of syndiotactic polypropylene and low-isotactic polypropylene.

IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride

(combined polymn. catalyst systems; olefin- and polyene-based block graft copolymers as compatibilizers for thermoplastic resin blends)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
(olefin- and polyene-based block graft copolymers as  
compatibilizers for thermoplastic resin blends)

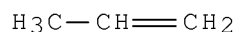
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F287-00

ICS C08F004-645; C08F010-00

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 35, 38

IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses  
130638-44-7, Isopropylidene(cyclopentadienyl)(9-  
fluorenyl)zirconium dichloride 153882-67-8,  
Rac-dimethylsilylenebis(2-methyl-4-phenylindenyl)zirconium  
dichloride 183431-85-8, Rac-(1,2'-ethylene)(2,1'-ethylene)-bis(3-  
methylindenyl)zirconium dichloride 220036-58-8,  
(1,2'-Dimethylsilylene)(2,1'-dimethylsilylene)bis(indenyl)hafnium  
dichloride 332172-16-4, (1,2'-Dimethylsilylene)(2,1'-

dimethylsilylene)bis(3-trimethylsilylmethylindenyl)zirconium  
dichloride

(combined polymn. catalyst systems; olefin- and polyene-based  
block graft copolymers as compatibilizers for thermoplastic resin  
blends)

IT 9002-88-4, HD 440M 9003-07-0, Atactic polypropylene  
25085-53-4, Isotactic polypropylene 26063-22-9,  
Syndiotactic polypropylene 28325-75-9, Syndiotactic polystyrene  
(olefin- and polyene-based block graft copolymers as  
compatibilizers for thermoplastic resin blends)

L69 ANSWER 8 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:808461 HCAPLUS Full-text

DN 137:311374

TI Ansa-bridged metallocene catalysts for controlled polymerization of  
olefins

IN Miller, Stephen A.; Bercaw, John E.

PA California Institute of Technology, USA

SO U.S., 32 pp.

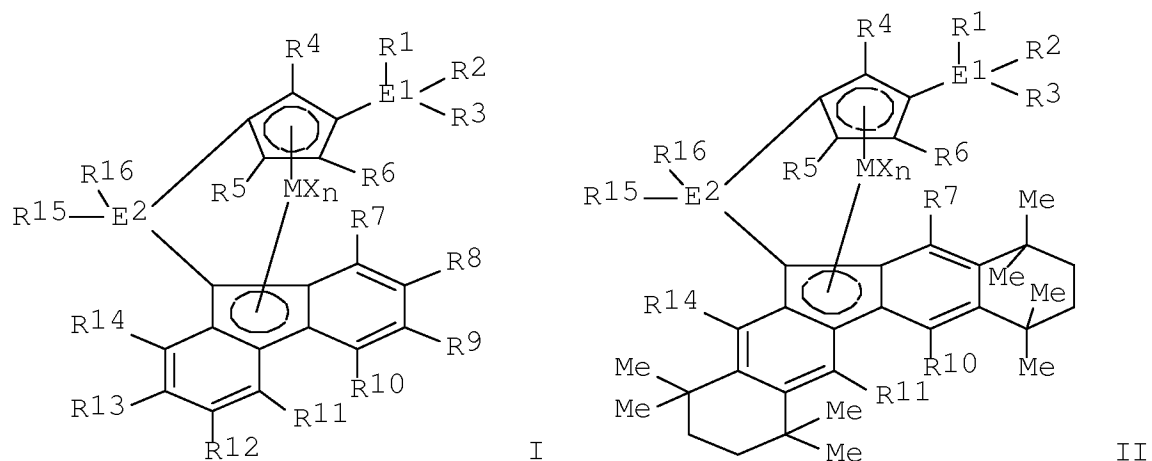
CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	US 6693153	B2	20040217		
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	US 1999-116646P	P	19990120	<--	
	US 1999-150083P	P	19990820	<--	
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OS	MARPAT 137:311374				
GI					



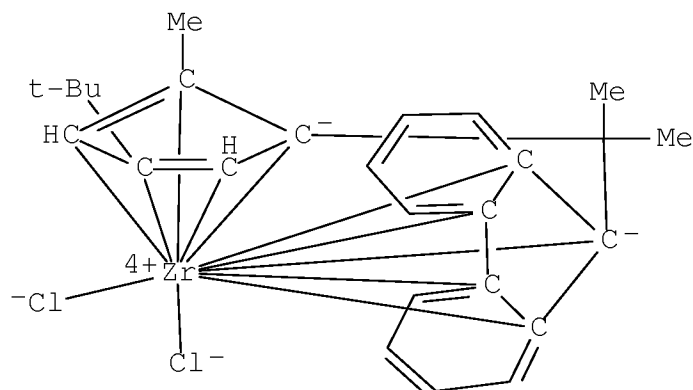
AB      Bridged metallocene complexes I and II were synthesized and used as catalysts for controlled polymn. of alkenes to a wide variety of isotactic, syndiotactic and stereoblock polyolefins and olefin copolymers, where M = Group III-V transition metals; X = H, F, Cl, Br, I, C1-10 alkyl, C1-10 alkoxy, C6-20 aryl, C6-20 alkylaryl or C6-20 aryloxy; n = 1-3; E1, E2 = C, Si or Ge; R1-3 = independently C1-10 alkyl, C1-10 silyl or C3-10 cycloalkyl; R1-R16 = independently H, C1-10 alkyl, C3-10 cycloalkyl, C6-16 aryl, C6-16 arylalkyl or C6-16 silyl, and optionally any two adjacent members of R5-R14 can form a ring. The type of polymer produced can be controlled by varying the catalyst system, specifically by varying the ligand substituents. Such catalyst systems are particularly useful for the polymn. of propylene to give elastomeric polypropylenes, which are characterized by dyad (m) tacticities of 55-65%, pentad (mmmm) tacticities of 25-35%, mol. wt. of 50,000-2,000,000, and mrrm+rrmr peak  $\leq$  5%.

IT      217176-68-6

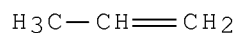
(bridged metallocene catalysts for controlled polymn. of olefins with specific tacticities)

RN      217176-68-6    HCAPLUS

CN      Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI)    (CA INDEX NAME)



IT 25085-53-4P  
 (bridged metallocene catalysts for controlled polymn. of olefins  
 with specific tacticities)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
 CM 1  
 CRN 115-07-1  
 CMF C3 H6



IC ICM C07F017-00  
 ICS B01J031-00; C08F004-642  
 INCL 556012000  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 29  
 IT 132510-07-7 132880-06-9 133190-48-4 146961-02-6 148423-37-4  
 148799-37-5 **217176-68-6** 473173-84-1 473173-87-4  
 473173-91-0 473174-08-2 473174-12-8 473174-16-2 473174-20-8  
 473174-30-0  
 (bridged metallocene catalysts for controlled polymn. of olefins  
 with specific tacticities)  
 IT 25085-53-4P 26063-22-9P, Polypropylene, syndiotactic  
 (bridged metallocene catalysts for controlled polymn. of olefins  
 with specific tacticities)  
 RE  
 (1) Abrams, M; Organometallics 1999, V18, P1389 HCAPLUS

- (2) Alt, H; J Organometallic Chemistry 1998, V568, P87 HCAPLUS
- (3) Anon; EP 277003 1988 HCAPLUS
- (4) Anon; EP 277004 1988 HCAPLUS
- (5) Anon; EP 427697 1990 HCAPLUS
- (6) Anon; JP 07-002935 1995
- (7) Anon; JP 7002935 1995
- (8) Anon; JP 09-194552 1997 HCAPLUS
- (9) Anon; JP 9194552 1997
- (10) Anon; WO 9854230 1998 HCAPLUS
- (11) Anon; WO 9914219 1999 HCAPLUS
- (12) Anon; WO 9967309 1999 HCAPLUS
- (13) Anon; WO 0049029 2000 HCAPLUS
- (14) Anon; WO 0049056 2000
- (15) Anon; WO 0127124 A1 2001 HCAPLUS
- (16) Anon; EP 1138687 A1 2001 HCAPLUS
- (17) Averbuj, C; J Am Chem Soc 1998, V120, P8640 HCAPLUS
- (18) Banzi, V; Die Angewandte Makromolekulare Chemie 1995, V229(3996), P113
- (19) Bochmann, M; Angew Chem Int Ed Engl 1990, V29, P780
- (20) Bravakis, A; Macromolecules 1998, V31, P1000 HCAPLUS
- (21) Brintzinger, H; Angew Chem Int Ed Engl 1995, V34, P1143 HCAPLUS
- (22) Bruce, M; J Am Chem Soc 1997, V119, P11174 HCAPLUS
- (23) Chien; US 5756614 A 1998 HCAPLUS
- (24) Ewen; US 5036034 A 1991 HCAPLUS
- (25) Hoel; US 4871705 A 1989 HCAPLUS
- (26) Hoel; US 5001205 A 1991 HCAPLUS
- (27) Hoel; US 5491207 A 1996 HCAPLUS
- (28) Kaminsky; US 4542199 A 1985 HCAPLUS
- (29) Miller, S; Ph D diss, Calif Inst of Tech, Thesis 1-320 2000
- (30) Okumura; US 5770664 A 1998 HCAPLUS
- (31) Resconi; US 5886123 A 1999 HCAPLUS
- (32) Schiffrino; US 5696213 A 1997 HCAPLUS
- (33) Waymouth; US 5594080 A 1997 HCAPLUS
- (34) Waymouth; US 5969070 A 1999 HCAPLUS

L69 ANSWER 9 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 2002:716334 HCAPLUS Full-text  
DN 137:248404  
TI Manufacture of polyolefin resin compositions and polypropylene  
compositions  
IN Machida, Shuji; Shinohara, Masayuki; Housaki, Tatsuya  
PA Idemitsu Petrochemical Co., Ltd., Japan  
SO PCT Int. Appl., 146 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2002072649	A1	20020919	WO 2002-JP2299	20020312

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W: JP, US  
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR  
EP 1375538 A1 20040102 EP 2002-702904 20020312

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EP 1375538 B1 20080109  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR  
US 20040106738 A1 20040603 US 2003-469701 20030912

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PRAI JP 2001-68422	A	20010312	<--
JP 2001-71948	A	20010314	<--
JP 2001-136854	A	20010508	<--
JP 2001-136855	A	20010508	<--
WO 2002-JP2299	W	20020312	<--

OS MARPAT 137:248404

AB Title highly uniform polyolefin resin compns., having improved melt tension and melt processability, are prepd. by first polymn. of C<sub>2</sub>H<sub>4</sub>, C<sub>3</sub>H<sub>6</sub>, C<sub>4</sub>-20  $\alpha$ -olefins, styrene, and/or cycloolefins in the presence of cyclopentadienyl skeleton-contg. Group IV transition metal compd. catalysts and catalyst aids to form polymers (A), followed by second polymn. of the A with the monomers described in first polymn. in the presence of polyenes at an amt. of 1.0 + 10<sup>-7</sup> to 1.0 + 10<sup>-3</sup> mol per g the A polymers. Polymg. C<sub>3</sub>H<sub>6</sub> in the presence of Al(iso-Bu)<sub>3</sub> and a catalyst prepd. from SiO<sub>2</sub>-supported methylaluminoxane and rac-dimethylsilylbis[2-methyl-4-phenyl-indenyl] ZrCl<sub>2</sub> at 70° to form polypropylene (I), further polymg. the I with more C<sub>3</sub>H<sub>6</sub> in the presence of 1,9-decadiene at 1.6 + 10<sup>-6</sup> mol per g of I at 40° gave a polymer compn. showing melt index 0.98 g/10 min, bulk d. 0.45 g/mL, melt tension 16.8 g, no Decalin-insol. content, polydispersity 3.5, and intrinsic viscosity of polymer in the second step to the first step of 1.11. Other polypropylene compn. examples showed branching parameter and index in sp. ranges and regulated content of high-mol. wt. components or further molded into gel-free foam moldings.

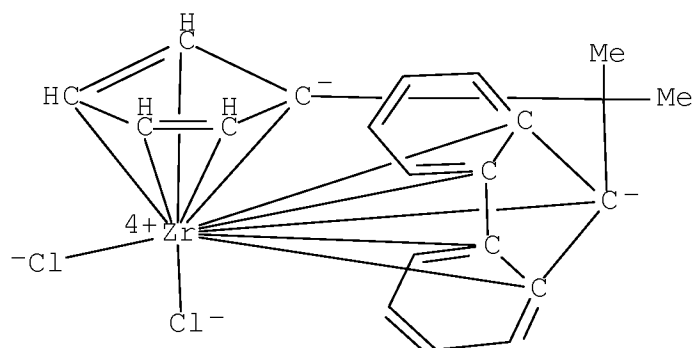
IT 130638-44-7

(manuf. of polyolefin and polypropylene compns. by 2-step process

involving specific catalysts and polyene for moldings)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

(manuf. of polyolefin and polypropylene compns. by 2-step process involving specific catalysts and polyene for moldings)

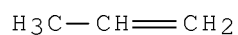
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F210-16

ICS C08L023-16; C08F004-64; C08F297-06

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 67

IT 97-93-8, Triethylaluminum, uses 100-99-2, Trisisobutylaluminum, uses 130638-44-7 143278-86-8, Rac-dimethylsilylenebis[2-methylindenyl]zirconium dichloride 150995-51-0, Rac-dimethylsilylenebis[2-methyl-4,5-benzoidenyl]zirconium dichloride 153882-67-8, Rac-dimethylsilylenebis[2-methyl-4-phenylindenyl]zirconium

dichloride 177794-75-1, Octahydrofluorenyltitanium trimethoxide  
183431-85-8, Rac-(1,2'-ethylene)(2,1'-ethylene)bis(3-  
methylindenyl)zirconium dichloride 192314-04-8,  
Rac-(1,2'-ethylene)(2,1'-ethylene)bis(indenyl) zirconium dichloride  
203175-17-1 329015-04-5

(manuf. of polyolefin and polypropylene compns. by 2-step process  
involving specific catalysts and polyene for moldings)

IT 9002-88-4P, Polyethylene 9003-07-0P, Polypropylene 9003-70-7P,  
Divinylbenzene-styrene copolymer 9010-79-1P, Ethylene-propylene  
copolymer 9039-74-1P, Divinylbenzene-propylene copolymer  
~~25085-53-4P~~, Isotactic polypropylene 26221-73-8P,  
Ethylene-1-octene copolymer 26522-58-7P,  
Dicyclopentadiene-propylene copolymer 28325-75-9P, Syndiotactic  
polystyrene 29564-28-1P, 1,7-Octadiene-propylene copolymer  
96317-92-9P, 1,9-Decadiene-ethylene-propylene copolymer  
112155-92-7P, 1,9-Decadiene-ethylene copolymer 120006-66-8P,  
1,5-Hexadiene-propylene copolymer 130479-39-9P,  
1,9-Decadiene-ethylene-1-octene copolymer 137635-25-7P,  
1,9-Decadiene-propylene copolymer 149012-10-2P,  
Propylene-5-vinyl-2-norbornene copolymer 151784-10-0P  
158575-35-0P, Norbornadiene-propylene copolymer 161740-56-3P  
460095-22-1P 460095-23-2P

(manuf. of polyolefin and polypropylene compns. by 2-step process  
involving specific catalysts and polyene for moldings)

RE

- (1) Esso Research And Engineering Co; FR 2190838 A 1974 HCAPLUS
- (2) Esso Research And Engineering Co; DE 2332890 A 1974 HCAPLUS
- (3) Esso Research And Engineering Co; JP 4942788 A 1974
- (4) Esso Research And Engineering Co; NL 7309032 A 1974 HCAPLUS
- (5) Idemitsu Kosan Co Ltd; US 5670580 A 1995 HCAPLUS
- (6) Idemitsu Kosan Co Ltd; EP 686649 A1 1995 HCAPLUS
- (7) Idemitsu Kosan Co Ltd; WO 9419382 A1 1995 HCAPLUS
- (8) Mitsubishi Chemical Corp; JP 892337 A 1996
- (9) Mitsubishi Chemical Corp; JP 09235337 A 1997 HCAPLUS
- (10) Mitsui Toatsu Chemicals Inc; JP 62161810 A 1987 HCAPLUS

L69 ANSWER 10 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:615719 HCAPLUS Full-text

DN 137:170379

TI Polyolefin graft resin compositions

IN Machida, Shuji; Sato, Kazuo

PA Idemitsu Petrochemical Co., Ltd., Japan

SO PCT Int. Appl., 69 pp.

CODEN: PIXXD2

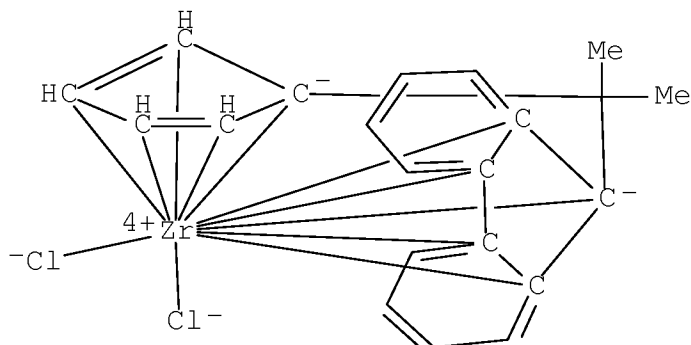
DT Patent

LA Japanese

FAN.CNT 1

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	JP 4237492	B2	20090311	JP 2002-563235	200202 06
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	US 20040072950	A1	20040415	US 2003-467298	200308 07
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	US 7193013	B2	20070320		
PRAI	JP 2001-30644	A	20010207	<--	
	WO 2002-JP952	W	20020206	<--	
AB	A polyolefin resin compn. comprises (A) a polyolefin obtained from at least one monomer selected among $\alpha$ -olefins, cycloolefins, and styrene and derivs. thereof, (B) a polyolefin which is obtained from at least one monomer and is different in compn. and properties from the polyolefin A, and (C) a graft copolymer obtained by bonding the polyolefin A to the polyolefin B through a polyene, wherein the ratio of the relaxation rate of a long-relaxing ingredient (1/R1) in the compn. as measured by solid 1H-NMR spectroscopy to the relaxation rate of a resin mixt. consisting of the ingredient (A) and the ingredient (B) only (1/R1)0, i.e., [(1/R1)/(1/R1)0], is 1.01 or higher and the compn. has an intrinsic viscosity $[\eta]$ (135° decalin) 0.1-10 dL/g. This resin compn. can be easily controlled with respect to factors which influence or develop morphol. or material properties such as interfacial strength. Thus, a composite material comprising polyolefin resins can be designed according to properties required.				
IT	130638-44-7				
	(polyolefin resin compn.)				
RN	130638-44-7 HCAPLUS				
CN	Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-				

methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

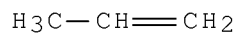


IT 25085-53-4, Isotactic polypropylene  
(polyolefin resin compn.)  
RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08L023-02  
ICS C08L025-00; C08L045-00; C08L051-06  
CC 37-6 (Plastics Manufacture and Processing)  
IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses  
7631-86-9, P 10, uses 130638-44-7 153882-67-8  
177794-75-1, Octahydrofluorenyltitanium trimethoxide 332172-16-4  
(polyolefin resin compn.)  
IT 9003-07-0, Polypropylene 25085-53-4, Isotactic  
polypropylene 26007-43-2, Ethylene-norbornene copolymer  
26063-22-9, Syndiotactic polypropylene 28325-75-9, Syndiotactic  
polystyrene  
(polyolefin resin compn.)  
RE  
(1) Basf Ag; JP 10316711 A 1998 HCAPLUS  
(2) Basf Ag; DE 19709667 A1 1998 HCAPLUS

(3) Basf Ag; EP 864593 A1 1998 HCAPLUS  
 (4) Exxon Chemical Patents Inc; CA 2001462 A 1990 HCAPLUS  
 (5) Exxon Chemical Patents Inc; JP 328209 A 1990  
 (6) Exxon Chemical Patents Inc; EP 366411 A2 1990 HCAPLUS  
 (7) Exxon Chemical Patents Inc; BR 8905506 A 1990 HCAPLUS  
 (8) Exxon Chemical Patents Inc; AU 8943842 A 1990 HCAPLUS  
 (9) Idemitsu Kosan Co Ltd; JP 05247147 A 1993 HCAPLUS  
 (10) Idemitsu Kosan Co Ltd; JP 05320449 A 1993 HCAPLUS  
 (11) Idemitsu Kosan Co Ltd; US 5362814 A 1993 HCAPLUS  
 (12) Idemitsu Kosan Co Ltd; US 5418276 A 1993 HCAPLUS  
 (13) Idemitsu Kosan Co Ltd; EP 559108 A1 1993 HCAPLUS  
 (14) Showa Denko K K; JP 04288355 A 1992 HCAPLUS  
 (15) Smith, J; US 5455300 A 1995 HCAPLUS  
 (16) Smith, J; EP 697438 A1 1995 HCAPLUS  
 (17) Smith, J; JP 859952 A 1995

L69 ANSWER 11 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2002:272838 HCAPLUS Full-text

DN 136:295217

TI Production of **polypropylene** using metallocene  
 polymerization catalysts

IN Debras, Guy; Dupire, Marc; Michel, Jacques

PA ATOFINA Research SA, Belg.

SO Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 1195391	A1	20020410	EP 2000-203442	200010 05

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 WO 2002028923 A1 20020411 WO 2001-EP11489  
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 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
 NO, NZ, PH, PL, PT, RO, RU  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH,

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OS MARPAT 136:295217

AB A process for producing polypropylene, comprising homopolymerising propylene or copolymerising propylene with at least one comonomers selected from ethylene and C4-10 1-olefins in the presence of a metallocene catalyst system comprising (a) a metallocene catalyst  $R'(XRM)$  ( $Cp'R'n$ ) $MQ_2$ , wherein X = cyclopentadienyl moiety (Cp) or heteroatom, Cp' = substituted or unsubstituted fluorenyl ring; R = H or C1-20 hydrocarbyl in which  $0 \leq m \leq 4$ ; R' = C1-20 hydrocarbyl in which  $0 \leq n \leq 8$ ; R' = bridge which comprises a C1-20 alkylene radical, a dialkyl Ge or Si or siloxane, or an alkyl phosphine or amine radical, which bridge is substituted or unsubstituted, M is a Group IVB transition metal, V or a lanthanide metal and each Q = C1-20 hydrocarbyl or halogen, and (b) a cocatalyst which activates the catalyst component, the homo- or co- polymn. being performed in a

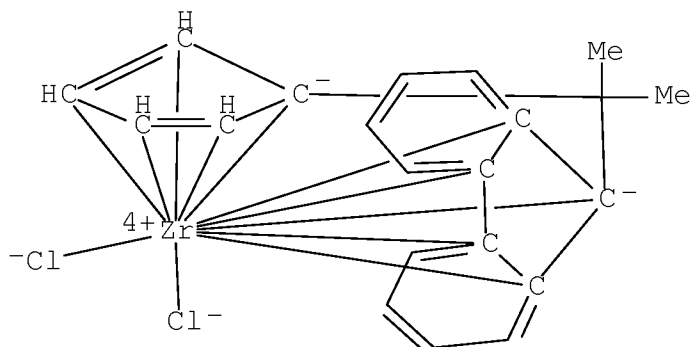
slurry process in a hydrocarbon diluent for the polypropylene or being performed in a soln. process in a hydrocarbon solvent for the polypropylene, the concn. of propylene monomer in the diluent or solvent being <70%, based on the wt. of the diluent or solvent, to produce a polypropylene homopolymer or copolymer having long chain branches on the polypropylene mols.

IT 130638-44-7 217176-68-6

(catalyst; prodn. of polypropylene using metallocene polymn. catalysts)

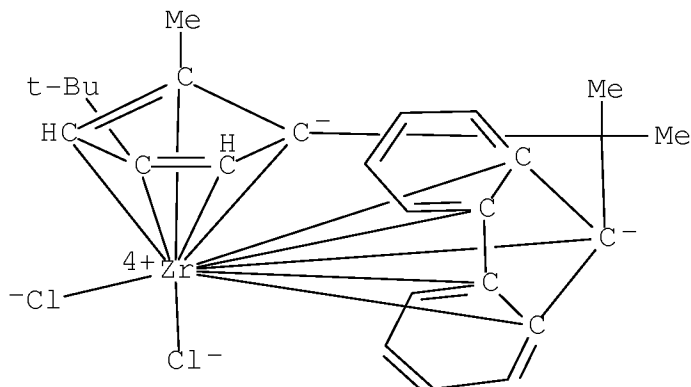
RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

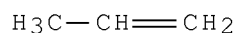


RN 217176-68-6 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]- (9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(prodn. of polypropylene using metallocene polymn. catalysts)  
RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
  
CM 1  
  
CRN 115-07-1  
CMF C3 H6



IC ICM C08F110-06  
ICS C08F002-06; C08F002-14  
CC 35-3 (Chemistry of Synthetic High Polymers)  
IT 130638-44-7 217176-68-6  
(catalyst; prodn. of polypropylene using metallocene polymn. catalysts)  
IT 9003-07-0P, Polypropylene 25085-53-4P, Isotactic  
polypropylene 26063-22-9P, Syndiotactic polypropylene  
(prodn. of polypropylene using metallocene polymn. catalysts)  
RE  
(1) Borealis As; WO 9902540 A 1999 HCAPLUS  
(2) Chisso Corp; EP 0678527 A 1995 HCAPLUS  
(3) Dow Chemical Co; WO 9941289 A 1999 HCAPLUS  
(4) Exxon Chemical Patents Inc; WO 0012572 A 2000 HCAPLUS  
(5) Himont Inc; EP 0190889 A 1986 HCAPLUS  
(6) Pak-Wing, C; US 6060567 A 2000 HCAPLUS

L69 ANSWER 12 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 1998:779821 HCAPLUS Full-text  
DN 130:52816  
TI Metallocene catalyst component and its use in producing isotactic  
polyolefins  
IN Razavi, Abbas; Bellia, Vincenzo  
PA Fina Research S.A., Belg.  
SO Eur. Pat. Appl., 15 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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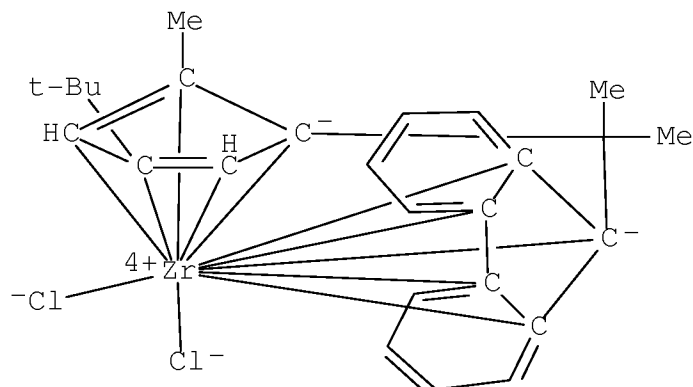
PI	EP 881236	A1	19981202	EP 1997-108467	199705 26
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	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
WO 9854230	A1	19981203	WO 1998-EP3099		199805 26
				<--	
	W: JP, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 984989	A1	20000315	EP 1998-930732		199805 26
				<--	
EP 984989	B1	20030625			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
JP 2001526730	T	20011218	JP 1999-500228		199805 26
				<--	
JP 4208097	B2	20090114			
EP 1283223	A2	20030212	EP 2002-78802		199805 26
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EP 1283223	A3	20041222			
EP 1283223	B1	20080409			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
AT 243717	T	20030715	AT 1998-930732		199805 26
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PT 984989	T	20030930	PT 1998-930732		199805 26
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ES 2202875	T3	20040401	ES 1998-930732		199805 26
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AT 391734	T	20080415	AT 2002-78802	199805 26
			<--	
ES 2302782	T3	20080801	ES 2002-78802	199805 26
			<--	
US 6559089	B1	20030506	US 2000-424416	200002 15
			<--	

PRAI EP 1997-108467      A      19970526      <--  
 EP 1998-930732      A3      19980526      <--  
 WO 1998-EP3099      W      19980526      <--  
 OS MARPAT 130:52816  
 AB    A metallocene catalyst component for use in prepg. isotactic polyolefins has the general formula  $R''(CpR_1R_2)(Cp'R_n')MQ_2$ , where Cp is a substituted cyclopentadienyl ring; Cp' is a substituted or unsubstituted fluorenyl ring; R'' is a structural bridge imparting stereorigidity to the component; R<sub>1</sub> is a substituent on the cyclopentadienyl ring which is distal to the bridge, which distal substituent comprises a bulky group of the formula XR<sub>33</sub> in which X is a Group IVA element and each R<sub>3</sub> is H or C<sub>1</sub>-20 hydrocarbyl; R<sub>2</sub> is a substituent on the cyclopentadienyl ring which is proximal to the bridge and positioned non-vicinal to the distal substituent and is of the formula YR<sub>43</sub> in which Y is a Group IVA element and each R<sub>4</sub> is H or C<sub>1</sub>-7 hydrocarbyl; each R' is C<sub>1</sub>-20 hydrocarbyl;  $0 \leq n \leq 8$ ; M is a Group IVB transition metal or V; and each Q is C<sub>1</sub>-20 hydrocarbyl or halogen. Thus, reaction of methylcyclopentadiene with acetone gave a mixt. of 3,6,6- and 5,6,6-trimethylfulvene, which reacted with MeLi to give the tert-butylmethylcyclopentadiene isomers. Further reaction with acetone and then with fluorene gave a mixt. of 9-[1-(3-tert-butyl-2- and -5-methylcyclopentadienyl)-1-methylethyl]fluorene, which was treated with MeLi and ZrCl<sub>4</sub> to give an easily sepd. mixt. of metallocene isomers. Polymn. of propylene in bulk or dild. with cyclohexane or isobutane at 60° with the metallocene in which the Me and tert-Bu substituents were non-vicinal, precontacted with Me aluminoxane, gave a homopolymer with >83% isotactic pentads, vs. 60-70% when the other metallocene isomer was used.

IT 217176-68-6P  
 (metallocene catalyst component for producing isotactic polyolefins)

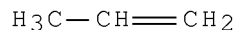
RN 217176-68-6 HCAPLUS  
 CN Zirconium, dichloro[ $\eta^{10}$ -[4-(1,1-dimethylethyl)-2-methyl-2,4-cyclopentadien-1-ylidene](1-methylethylidene)-9H-fluoren-9-ylidene]-(9CI) (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(metallocene catalyst component for producing isotactic  
polyolefins)  
RN 25085-53-4 HCAPLUS  
CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1  
CMF C3 H6



IC ICM C08F010-00  
ICS C08F004-642  
CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 29  
IT 217176-68-6P 217176-70-0P  
(metallocene catalyst component for producing isotactic  
polyolefins)  
IT 25085-53-4P, Isotactic polypropylene  
(metallocene catalyst component for producing isotactic  
polyolefins)  
RE  
(1) Danubia Petrochem Polymere; EP 0693497 A HCAPLUS  
(2) Ewen, J; US 5459117 A HCAPLUS  
(3) Fina Technology; EP 0537130 A HCAPLUS

(4) Fina Technology; EP 0747406 A HCAPLUS

L69 ANSWER 13 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1997:254486 HCAPLUS Full-text

DN 126:251478

OREF 126:48633a,48636a

TI Effect of the structure of a zirconocene-based catalyst on the stereoregularity and properties of polypropylene

AU Meneghetti, Mario R.; Forte, Madalena C.; Dupont, Jairton

CS Inst. Quimica, UFRGS, Porto Alegre, 91501-970, Brazil

SO Polimeros: Ciencia e Tecnologia (1997), 7(1), 30-36

CODEN: PCTEFL; ISSN: 0104-1428

PB Associacao Brasileira de Polimeros

DT Journal

LA Portuguese

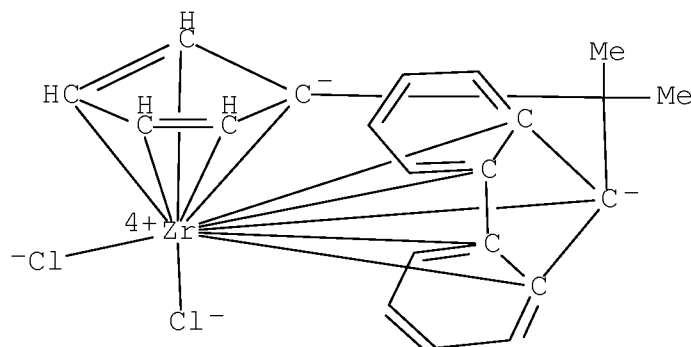
AB Metallocenes with different symmetry in combination with methylaluminoxane (MAO), were used as catalysts in site-specific polymn. of propylene at different temps. The metallocenes rac-ethylene-bis( $\eta^5$ -1-indenyl)zirconium dichloride, with C<sub>2</sub> symmetry and isopropylidene-( $\eta^5$ -cyclopentadienyl)( $\eta^5$ -9-fluorenyl)zirconium dichloride, with C<sub>s</sub> symmetry, produce isotactic polypropylene and syndiotactic polypropylene resp. The degree of tacticity of these polymers decreases with the increase of polymn. temp. Only atactic polypropylene was formed when the unbridged zirconocenes bis( $\eta^5$ -cyclopentadienyl)zirconium dichloride and bis( $\eta^5$ -indenyl)zirconium dichloride were used, for all polymn. temps. The polymer micro-tacticity was verified by <sup>13</sup>C NMR.

IT 130638-44-7

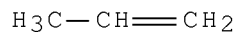
(role of group symmetry of zirconocene-based catalyst on tacticity and properties of polypropylene)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta^{10}$ -2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



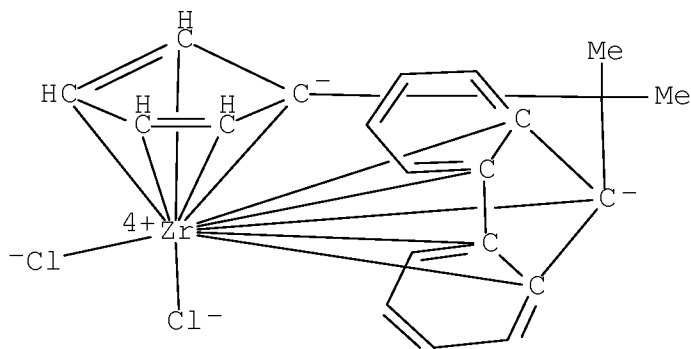
IT 25085-53-4P, Isotactic polypropylene  
 (role of group symmetry of zirconocene-based catalyst on  
 tacticity and properties of polypropylene)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
 CM 1  
 CRN 115-07-1  
 CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 36, 67  
 IT 1291-32-3, Bis( $\eta^5$ -cyclopentadienyl)zirconium dichloride  
 12148-49-1, Bis(indenyl)zirconium dichloride 100080-82-8  
 130638-44-7  
 (role of group symmetry of zirconocene-based catalyst on  
 tacticity and properties of polypropylene)  
 IT 9003-07-0P, Atactic polypropylene 25085-53-4P, Isotactic  
 polypropylene  
 (role of group symmetry of zirconocene-based catalyst on  
 tacticity and properties of polypropylene)  
 L69 ANSWER 14 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 1997:48896 HCAPLUS Full-text  
 DN 126:60496  
 OREF 126:11883a,11886a  
 TI Producing an isotactic/syndiotactic polymer blend in a single  
 reactor  
 IN Reddy, Baireddy R.; Shamshoum, Edwar S.  
 PA Fina Technology, Inc., USA  
 SO Eur. Pat. Appl., 14 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 747403	A1	19961211	EP 1996-109109	
					199606 07
				<--	
	EP 747403	B1	19990901		
	R: BE, DE, ES, FR, GB, IT, NL				
	US 5643846	A	19970701	US 1995-473680	199506 07
				<--	
	JP 09100310	A	19970415	JP 1996-168291	199606 07
				<--	
	ES 2137588	T3	19991216	ES 1996-109109	199606 07
				<--	
PRAI	US 1995-473680	A	19950607	<--	
	US 1993-54916	A3	19930428	<--	
OS	MARPAT 126:60496				
AB	Using a combined catalyst system of $\geq 1$ metallocene catalyst and $\geq 1$ conventional supported Ziegler-Natta catalyst, the title blends are made. The metallocene catalyst comprises a bridged metallocene compd., e.g. cyclopentadiene and substituted cyclopentadiene, bound to Group IIIB, IVB, VB, or VIB metal, and an ionizing agent such as Me aluminoxane. The conventional supported Ziegler-Natta catalyst comprises an Al alkyl and a transition metal compd. with, optionally, an electron donor. Thus, propylene polymn. at 60° for 1 h in the presence of conventional supported Ziegler-Natta catalyst, cyclohexylmethyldimethoxysilane, AlEt <sub>3</sub> and isopropyl(fluorenyl)(cyclopentadienyl) zirconium dichloride/Me aluminoxane solid gave a product having polydispersity (bimodal distribution) 13.3.				
IT	130638-44-7 (producing an isotactic/syndiotactic polymer blend in a single reactor)				
RN	130638-44-7 HCAPLUS				
CN	Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)				



IT 25085-53-4P, Isotactic polypropylene  
(producing an isotactic/syndiotactic polymer blend in a single reactor)

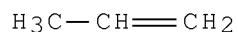
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F010-00  
ICS C08F004-613

CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 37

IT 75-24-1, Trimethylaluminum 97-93-8, Triethylaluminum, uses  
100-99-2, Triisobutylaluminum, uses 1790-23-4,  
Dichlorodipropoxytitanium 3112-67-2, Ethoxytrichlorotitanium  
3712-48-9, Chlorotriethoxytitanium 3981-88-2 4200-76-4,  
Chlorotributoxytitanium 6843-66-9, Diphenyldimethoxysilane  
7550-45-0, Titanium tetrachloride, uses 7789-68-6, Titanium  
tetrabromide 17865-32-6, Cyclohexylmethyldimethoxysilane  
18395-30-7, Isobutyltrimethoxysilane 28319-17-7,  
Dodecyloxytrichlorotitanium 56971-78-9, Dichlorodihexyloxytitanium  
130638-44-7

(producing an isotactic/syndiotactic polymer blend in a single reactor)

IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,

Syndiotactic polypropylene  
(producing an isotactic/syndiotactic polymer blend in a single reactor)

L69 ANSWER 15 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1996:569301 HCAPLUS Full-text

DN 125:198078

OREF 125:37061a,37064a

TI Stretched polypropylene films for electric capacitors

IN Sugimoto, Ryuichi; Yamada, Takayuki; Ishii, Yukio

PA Mitsui Toatsu Chemicals, Japan; Mitsui Chemicals Inc.

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 08156118	A	19960618	JP 1994-299265	19941202

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JP 3618130 B2 20050209  
PRAI JP 1994-299265 19941202 <--

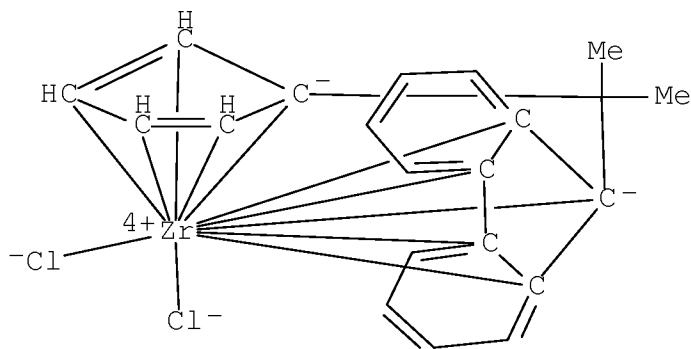
AB Title films are obtained. by monoaxially or biaxially stretching polypropylene showing isotactic or syndiotactic pentad fraction of boiling-heptane-sol. fraction  $\geq 0.5$  (detd. by  $^{13}\text{C}$ -NMR). Thus, propylene was polymd. at 3 kg/cm<sup>2</sup>-G for 2 h in the presence of Me aluminoxane and dimethylsilylenebis(2-methyl-4-isopropylindenyl)zirconium dichloride to obtain polypropylene (isotactic pentad fraction 0.89), which was blended with BHT and Ca stearate, pelletized at  $\leq 230^\circ$ , molded into a sheet, and stretched 7-fold in the transverse direction to give a film showing haze 30.0 and dielec. loss tangent 0.001.

IT ~~130638-44-7~~, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride

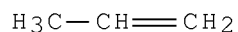
(catalysts, for polymn.; stereoregular polypropylene stretched films for elec. capacitors)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
 (stereoregular polypropylene stretched films for elec.  
 capacitors)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
 CM 1  
 CRN 115-07-1  
 CME C3 H6



IC ICM B29D007-00  
 ICS B29C055-02; C08J005-18; H01G004-18  
 ICI B29K023-00, B29L007-00, B29L031-34  
 CC 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 76  
 IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-  
 fluorenyl)zirconium dichloride 167254-77-5  
 (catalysts, for polymn.; stereoregular polypropylene stretched  
 films for elec. capacitors)  
 IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
 Syndiotactic polypropylene  
 (stereoregular polypropylene stretched films for elec.  
 capacitors)  
 L69 ANSWER 16 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 1996:499420 HCAPLUS Full-text  
 DN 125:249167

OREF 125:46585a,46588a

TI Engineering of new supermolecular structures defined by the chain architectures of polypropylenes and their blends

AU Kressler, Joerg; Thomann, Ralf; Muelhaupt, Rolf

CS Albert-Ludwigs-Univ. Freiburg, Germany

SO Annual Technical Conference - Society of Plastics Engineers (1996), 54th(Vol. 2), 2289-2293  
CODEN: ACPED4; ISSN: 0272-5223

PB Society of Plastics Engineers

DT Journal

LA English

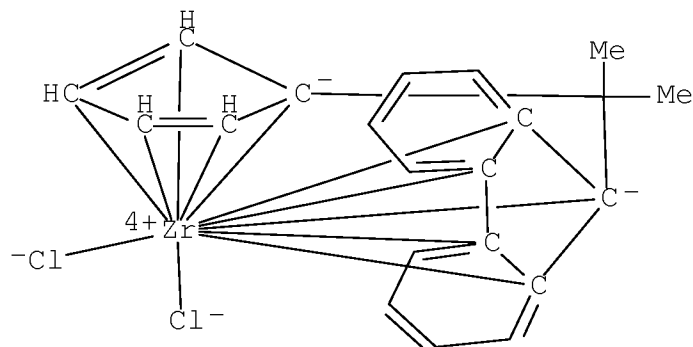
AB Based on metallocene catalysts it is possible to prep. high-mol. wt. samples of isotactic polypropylene (i-PP) which crystallize exclusively in their  $\gamma$ -modification. This is caused by regular defects in the tacticity and results in new supermol. structures studied by light and at. force microscopy. Also highly stereoregular syndiotactic polypropylene (s-PP) can be prepd. using metallocene catalysts. The melt crystd. samples show different types of nonspherulitic supermol. structures. Both i-PP and s-PP phase sep. in the melt. This can be explained in terms of an equation-of-state theory. Furthermore, the modification of different polypropylenes with triblock copolymers, i.e., polystyrene-poly-1-butene-polystyrene, is discussed. Mech. properties are related to the morphol. development in the blends.

IT 130638-44-7

(catalyst; engineering of new polypropylene supermol. structures by varying chain architecture during synthesis with metallocene catalysts and by blending with each other or triblock copolymers)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene  
(engineering of new polypropylene supermol. structures by varying  
chain architecture during synthesis with metallocene catalysts  
and by blending with each other or triblock copolymers)

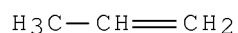
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 37-3 (Plastics Manufacture and Processing)

IT 100163-29-9, Ethylenebis(4,5,6,7-tetrahydro-1-indenyl)zirconium  
dichloride 130638-44-7 161442-55-3

(catalyst; engineering of new polypropylene supermol. structures  
by varying chain architecture during synthesis with metallocene  
catalysts and by blending with each other or triblock copolymers)

IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
Syndiotactic polypropylene

(engineering of new polypropylene supermol. structures by varying  
chain architecture during synthesis with metallocene catalysts  
and by blending with each other or triblock copolymers)

L69 ANSWER 17 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1995:675728 HCAPLUS Full-text

DN 123:286807

OREF 123:51417a,51420a

TI Syndiotactic polypropylene

AU Shiomura, T.; Kohno, M.; Inoue, N.; Yokote, Y.; Akiyama, M.;  
Asanuma, T.; Sugimoto, R.; Kimura, S.; Abe, M.

CS Central Research Institute, Mitsui Toatsu Chemicals, Inc., Yokohama,  
247, Japan

SO Studies in Surface Science and Catalysis (1994),  
89(Catalyst Design for Tailor-Made Polyolefins), 327-38  
CODEN: SSCTDM; ISSN: 0167-2991

PB Elsevier

DT Journal

LA English

AB Large-scale prodn. of syndiotactic polypropylene (SPP) can be carried  
out using modified zirconocenes and trialkylalumininums with reduced

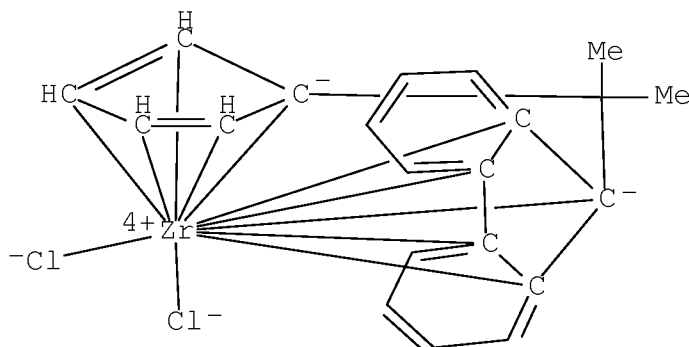
content of Me aluminoxane. Small modifications in the ligand structure gave unexpected effects in polymn. As was pointed by some authors, SPP was dogged by the difficulties in its processing due to its sluggish rate of crystn. Processing problems assocd. with a slow crystn. rate can be minimized without deterioration of the favorable features of SPP by blending with isotactic polypropylene.

IT 130638-44-7

(manuf. and crystn. behavior and processing of syndiotactic polypropylene in relation to)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[η<sup>10</sup>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene

(syndiotactic polypropylene blends; crystn. behavior and processability and properties of)

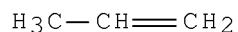
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)

IT 130638-44-7 132510-07-7 143319-72-6

(manuf. and crystn. behavior and processing of syndiotactic polypropylene in relation to)  
 IT 25085-53-4, Isotactic polypropylene  
 (syndiotactic polypropylene blends; crystn. behavior and processability and properties of)

L69 ANSWER 18 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1994:246658 HCAPLUS Full-text

DN 120:246658

OREF 120:43727a,43730a

TI Norbornene block copolymers as compatibilizers for polycycloolefin-polyolefin polymer blends

IN Epple, Ulrich; Brekner, Michael Joachim

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 35 pp.

CODEN: EPXXDW

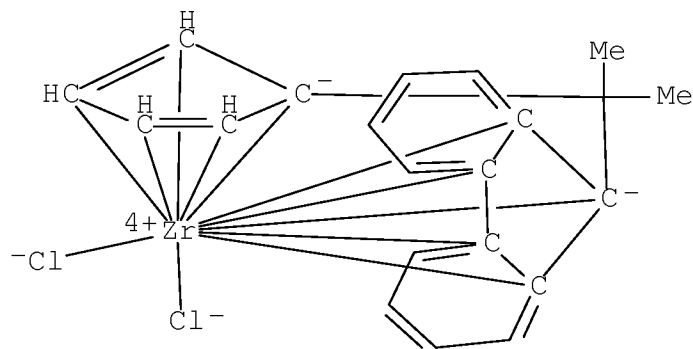
DT Patent

LA German

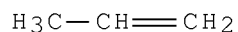
FAN.CNT 1

	PATENT NO. ----- -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
PI	EP 566988	A1	19931027	EP 1993-106131	199304 15
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	EP 566988	B1	19960918		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	DE 4213219	A1	19931028	DE 1992-4213219	199204 22
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	AT 143041	T	19961015	AT 1993-106131	199304 15
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	ES 2094404	T3	19970116	ES 1993-106131	199304 15
				<--	
	US 5359001	A	19941025	US 1993-49980	199304 20
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	CA 2094558	A1	19931023	CA 1993-2094558	199304 21

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ZA	9302789	A	19931116	ZA	1993-2789
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JP	06041361	A	19940215	JP	1993-94513
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RU	2072363	C1	19970127	RU	1993-4672
					199304 21
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AU	9337124	A	19931028	AU	1993-37124
					199304 22
				<--	
PRAI	DE 1992-4213219	A	19920422	<--	
	DE 1992-4241001	A	19921205	<--	
AB	<p>The title blends, useful for molded parts and as matrix polymers for composites, comprise <math>\geq 1</math> cycloolefin polymer and/or <math>\geq 1</math> polyolefin and, as a compatibilizer, a polyolefin block copolymer with norbornene, its homolog, or a related compd. of specified structure. Thus a blend contg. 45 parts of a 48:52 (mol.%) ethylene-norbornene copolymer [prepn. by using a Me aluminoxane-diphenylmethylen(9-fluorenyl)-cyclopentadienyl- zirconium dichloride catalyst given], 45 parts of high-d. polyethylene, and 10 parts of a block copolymer comprising ethylene-norbornene copolymer segment and a polyethylene segment [prepn. by using racemic dimethylsilylbis(1-indenyl)zirconium dichloride-Me aluminoxane and AlMe<sub>3</sub> catalysts given] had a single detectable Tg.</p>				
IT	<p><b>130638-44-7</b>  (catalyst contg. aluminoxane and, ethylene-norbornene copolymer prepn. in presence of)</p>				
RN	130638-44-7 HCAPLUS				
CN	Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)				



IT 25085-53-4, Isotactic polypropylene  
 (polycycloolefin blends, contg. norbornene block copolymers as  
 compatibilizers)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
 CM 1  
 CRN 115-07-1  
 CMF C3 H6



IC ICM C08L053-00  
 ICS C08L065-00; C08F232-00; C08F297-08  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 35  
 IT 130638-44-7 132510-07-7  
 (catalyst contg. aluminoxane and, ethylene-norbornene copolymer  
 prepn. in presence of)  
 IT 9002-88-4, Polyethylene 25085-53-4, Isotactic  
 polypropylene  
 (polycycloolefin blends, contg. norbornene block copolymers as  
 compatibilizers)  
 L69 ANSWER 19 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 1993:192543 HCAPLUS Full-text  
 DN 118:192543  
 OREF 118:33093a,33096a  
 TI Aminated olefin polymers with good adhesion properties and

compatibility in blends  
 IN Tomita, Masayuki; Uchino, Hideshi; Sugano, Toshihiko; Fujita,  
 Takashi; Aritomi, Mitsutoshi  
 PA Mitsubishi Petrochemical Co., Ltd., Japan  
 SO Eur. Pat. Appl., 12 pp.  
 CODEN: EPXXDW

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 511846	A1	19921104	EP 1992-303862	199204 29
				<--	
	EP 511846	B1	19961002		
	EP 511846	B2	20020612		
	R: DE, FR, GB, IT, NL				
	JP 04328109	A	19921117	JP 1991-98821	199104 30
				<--	
	JP 3176386	B2	20010618		
	US 5444125	A	19950822	US 1992-876037	199204 30

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PRAI JP 1991-98821 A 19910430 <--

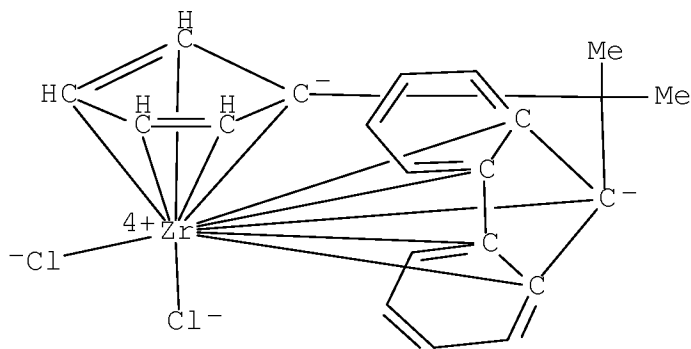
OS MARPAT 118:192543

AB The title polymers are prepd. by amination of a terminal double bond of an isotactic or syndiotactic  $\alpha$ -olefin polymer prepd. with a catalyst comprising a metallocene and an aluminoxane. Polypropene having a terminal double bond, prepd. with Me aluminoxane and isopropylidene(cyclopentadienyl)(fluorenyl)zirconium dichloride as the catalyst, was aminated by reaction in turn with 9-BBN, NH<sub>4</sub>OH, and HOCl.

IT 130638-44-7  
 (catalysts, for prepn. of polyolefins with vinyl end group)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4DP, Isotactic polypropylene, vinyl-terminated  
(prepn. and amination of)

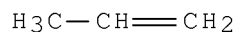
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F008-32

CC 35-8 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 37

IT 100080-82-8, Ethylenebis(indenyl)zirconium dichloride  
130638-44-7

(catalysts, for prepn. of polyolefins with vinyl end group)

IT 25085-53-4DP, Isotactic polypropylene, vinyl-terminated  
26063-22-9DP, Syndiotactic polypropylene, vinyl-terminated  
(prepn. and amination of)

L69 ANSWER 20 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1992:152458 HCAPLUS Full-text

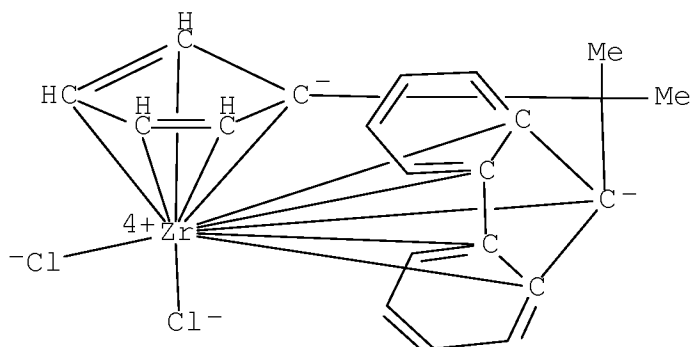
DN 116:152458

OREF 116:25833a,25836a

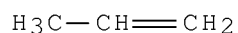
TI Metallocene/**polypropylene** structural relationships:  
implications on polymerization and stereochemical control mechanisms

AU Ewen, John A.; Elder, M. J.; Jones, R. L.; Haspeslagh, Luc; Atwood,  
Jerry L.; Bott, Simon G.; Robinson, Kerry

CS Fina Oil and Chem. Co., Deer Park, TX, 77536, USA  
 SO Makromolekulare Chemie, Macromolecular Symposia (1991),  
 48-49(Eur. Polym. Fed. Symp. Polym. Mater., 3rd, 1990), 253-95  
 CODEN: MCMSES; ISSN: 0258-0322  
 DT Journal  
 LA English  
 AB Zr- and Hf-based metallocenes paired with either  
 tetrakis(perfluorotetraphenyl)borate or methylaluminoxane are prepd.  
 and used as catalysts for polymn. of propylene (I). The  
 microstructure and stereochem. of the resulting poly-I is examd. as a  
 function of the structure and stereochem. of the polymn. catalyst.  
 Based on polymer-catalyst stereochem. relations, mechanisms of  
 polymn. are postulated.  
 IT 130638-44-7  
 (catalysts, contg. tetrakis(perfluorotetraphenyl)borate or  
 methylaluminoxane, for polymn. of propylene, structure-mechanism  
 relationships of)  
 RN 130638-44-7 HCAPLUS  
 CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-  
 methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
 (microstructure of, metallocene catalyst structure in relation  
 to)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
 CM 1  
 CRN 115-07-1  
 CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
 IT 100080-82-8 ~~130638-44-7~~ 133190-48-4 139665-12-6  
 139665-30-8 139665-31-9 139665-32-0 139665-33-1 139692-52-7  
 (catalysts, contg. tetrakis(perfluorotetraphenyl)borate or  
 methylaluminoxane, for polymn. of propylene, structure-mechanism  
 relationships of)  
 IT 9003-07-0, Atactic polypropylene ~~25085-53-4~~, Isotactic  
 polypropylene 26063-22-9, Syndiotactic polypropylene  
 (microstructure of, metallocene catalyst structure in relation  
 to)

L69 ANSWER 21 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1992:42583 HCAPLUS Full-text

DN 116:42583

OREF 116:7335a,7338a

TI Alkenylsilane polymer and polypropylene resin composition

IN Asanuma, Tadashi; Kawanishi, Kaoru; Matsuzawa, Hiroshi; Nishimori,  
 Yukari

PA Mitsui Toatsu Chemicals, Inc., Japan

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	EP 438710	A2	19910731	EP 1990-124077	199012 13
				<--	
	EP 438710	A3	19920122		
	EP 438710	B1	19950524		
	R: BE, DE, ES, FR, GB, IT, NL				
	JP 03255112	A	19911114	JP 1990-336077	199011 30
				<--	
	JP 2974404	B2	19991110		
	ES 2074518	T3	19950916	ES 1990-124077	199012

US 5225507                      A            19930706            US 1990-628357

199012  
17

CA 2033286                      A1           19910629            CA 1990-2033286

199012  
27

CA 2033286                      C            19961008  
CN 1053071                      A            19910717            CN 1990-110171

199012  
28

CN 1035620                      C            19970813  
PRAI JP 1989-338203            A            19891228 <--  
JP 1990-12420                   A            19900124 <--

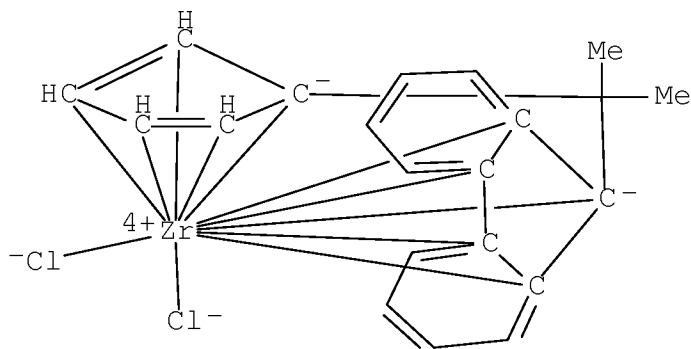
AB    An alkenylsilane (co)polymer (I) having substantially syndiotactic structure comprises units of  $\text{CH}_2\text{CH}[(\text{CH}_2)_n\text{SiX}_3]$  ( $n = 0-10$  integer;  $X =$  same or different H, halogen, C1-20 hydrocarbyl) and units of  $\text{CH}_2\text{CHR}$  ( $R = \text{H}$ , C1-23 straight or branched alkyl); the latter repeating units are less in amt. or absent and the polymer intrinsic viscosity ( $\eta$ ) (tetralin, 135°) is  $\geq 0.01$ . I is prepd. by addn. polymn. using an aluminoxane/transition metal compd. catalyst at -100° to 200° at a pressure from atm. to 10 kg/cm<sup>2</sup>. I can be used as a nucleating agent for cryst. polypropylene. Thus, trimethylallylsilane in PhMe was polymd. at 30° in the presence of methylaluminoxane and isopropyl(cyclopentadienyl-1-fluorenyl)zirconium dichloride at 30° to give homopolymer (II) with  $\eta$  0.23. Sep. syndiotactic polypropylene (III) (syndiotactic pentad 0.912;  $\eta$  1.24) was prepd. from propylene using the same polymn. catalysts system at 30°. To 99.9 parts III was added 0.1 part II. The m.p. of the compn. was 105°. Press molding at 250° to a 1-mm sheet showed flexural stiffness 6700 kg/cm<sup>2</sup>, tensile yield strength 265 kg/cm<sup>2</sup>, elongation 420% and Izod impact strength (notched; 23° and -10°) 14.6 and 2.8 kg-cm/cm, resp., vs. 4800, 210, 680, 14.0 and 2.1, resp. for III alone.

IT    130638-44-7

(catalyst contg., for polymn. of alkenylsilane and/or propylene)

RN    130638-44-7 HCAPLUS

CN    Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4, Isotactic polypropylene  
(nucleating agent for, alkenylsilane (co)polymers as)

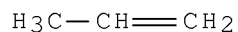
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F230-08

ICS C08L023-12

CC 37-6 (Plastics Manufacture and Processing)

IT 130638-44-7

(catalyst contg., for polymn. of alkenylsilane and/or propylene)

IT 25085-53-4, Isotactic polypropylene

(nucleating agent for, alkenylsilane (co)polymers as)

L69 ANSWER 22 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1992:21508 HCAPLUS Full-text

DN 116:21508

OREF 116:3803a,3806a

TI Stereospecific polymerizations with metallocene catalysts: products and technological aspects

AU Antberg, M.; Dolle, V.; Haftka, S.; Rohrmann, J.; Spaleck, W.; Winter, A.; Zimmermann, H. J.

CS Hoechst A.-G., Frankfurt/Main, Germany

SO Makromolekulare Chemie, Macromolecular Symposia (1991),

48-49(Eur. Polym. Fed. Symp. Polym. Mater., 3rd, 1990), 333-47  
CODEN: MCMSES; ISSN: 0258-0322

DT Journal

LA English

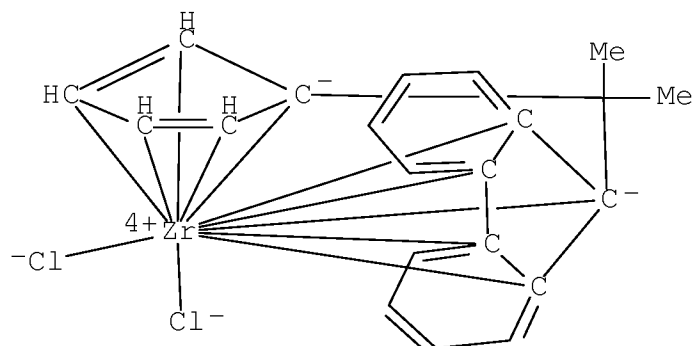
AB Morphol., mech. properties, and particle formation were compared for the polypropylenes prep'd. by stereospecific polymn. on isospecific or syndiospecific Hf- or Zr-contg. metallocenes and for the com. samples synthesized on a heterogeneous catalyst. The particle-forming process used for bulk polymn. might be a process of agglomeration and condensation induced by softening or even melting of the product. Polymer prep'd. with racemic dimethylsilylbis(2,4-dimethylcyclopentadienyl)zirconium dichloride as the catalyst showed only minor differences in comparison with Hostalen PPW 1780 S1.

IT 130638-44-7

(catalysts, for stereospecific polymn. of propylene)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

(prepn. of, catalysts for, hafnium- and zirconium-contg. metallocenes as)

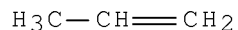
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 36  
 IT 100516-64-1 121009-93-6 124684-46-4 130638-44-7  
 (catalysts, for stereospecific polymn. of propylene)  
 IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
 Syndiotactic polypropylene  
 (prepn. of, catalysts for, hafnium- and zirconium-contg.  
 metallocenes as)

L69 ANSWER 23 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1991:472443 HCAPLUS Full-text

DN 115:72443

OREF 115:12545a,12548a

TI Catalyst for producing hemiisotactic polypropylene

IN Ewen, John A.

PA Fina Technology, Inc., USA

SO Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 423101	A2	19910417	EP 1990-870177	199010 09
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	EP 423101	A3	19910807		
	EP 423101	B1	20000126		
	EP 423101	B2	20060503		
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	US 5036034	A	19910730	US 1989-419221	198910 10
				<--	
	CA 2027124	A1	19910411	CA 1990-2027124	199010 09
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	CA 2027124	C	20010904		
	EP 742227	A2	19961113	EP 1996-112193	

				199010 09
			<--	
EP 742227	A3	19970122		
EP 742227	B1	20010314		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 189226	T	20000215	AT 1990-870177	
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ES 2142303	T3	20000416	ES 1990-870177	
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			<--	
AT 199722	T	20010315	AT 1996-112193	
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ES 2155909	T3	20010601	ES 1996-112193	
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CN 1051735	A	19910529	CN 1990-109215	
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CN 1028532	C	19950524		
KR 181495	B1	19990515	KR 1990-16066	
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CN 1100733	A	19950329	CN 1994-108568	
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CN 1058022	C	20001101		
US 6369175	B1	20020409	US 1996-663469	
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GR 3033307	T3	20000929	GR 2000-400990	
				200004 25

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T3

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GR 2001-400871

200106

13

PRAI US 1989-419221 A 19891010 <--  
 EP 1990-870177 A3 19901009 <--  
 US 1991-695139 B1 19910503 <--

OS MARPAT 115:72443

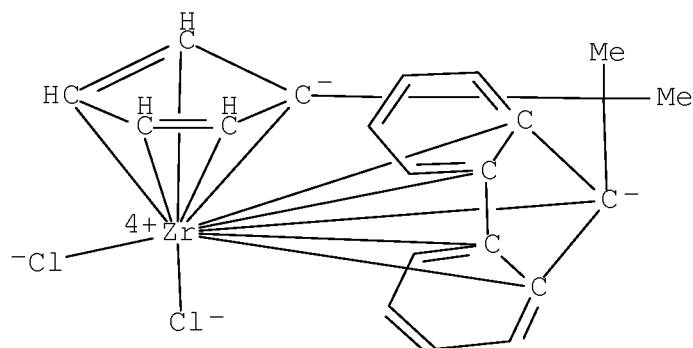
AB Metallocenes  $R_2(ZR_n)(ZR_m)MX_2$  [ $M$  = Group IV metals;  $R_{1,2}$  = C1-20 hydrocarbyl;  $R_2$  = structural bridge imparting stereorigidity to the compd.,  $X$  = halogen;  $Z$  = (substituted) cyclopentadienyl; and  $m, n = 0-4$ ; and  $ZR_n$  is sterically different ring from  $ZR_m$  resulting in asymmetry for the compds.] are used as polymn. catalysts to give polypropylene with hemiisotactic structure (isotactic structure on every other asym. C atom.). Thus, polymn. of 200 mL  $C_3H_6$  by a catalyst soln. contg. 1.4 mL methylaluminoxane and 5 mg isopropylidene(3-methylcyclopentadiene-1-fluorenyl)zirconium dichloride in 10-20 mL PhMe at  $60^\circ$  for 1 h gave a hemiisotactic polypropylene with polydispersity 1.9.

IT 130638-44-7

(catalysts, for prepn. of hemiisotactic polypropylene)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta^{10-2,4}$ -cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4

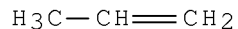
(plasticizer for, hemiisotactic polypropylene as)

RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

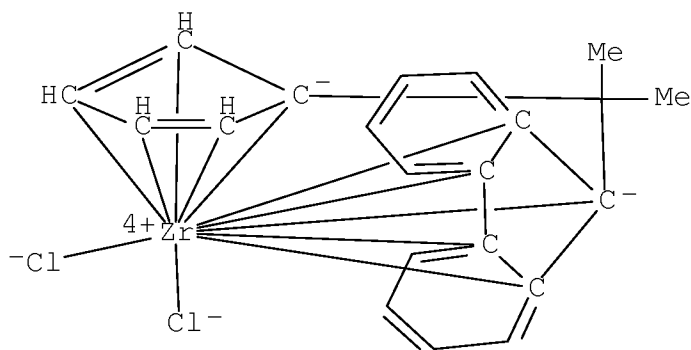
CM 1

CRN 115-07-1  
CMF C3 H6



IC ICM C07F017-00  
ICS C08F004-642; C08K005-00; C08L023-10  
CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 67  
IT ~~130638-44-7~~ 133190-48-4  
(catalysts, for prepn. of hemiisotactic polypropylene)  
IT ~~25085-53-4~~ 26063-22-9  
(plasticizer for, hemiisotactic polypropylene as)

L69 ANSWER 24 OF 24 HCAPLUS COPYRIGHT 2009 ACS on STN  
AN 1991:450344 HCAPLUS Full-text  
DN 115:50344  
OREF 115:8773a,8776a  
TI Propylene polymerization by stereorigid metallocene catalysts: some  
new aspects of the metallocene structure/~~polypropylene~~  
microstructure correlation  
AU Antberg, M.; Dolle, V.; Klein, R.; Rohrmann, J.; Spaleck, W.;  
Winter, A.  
CS Hoechst A.-G., Frankfurt/Main, 6230/80, Germany  
SO Studies in Surface Science and Catalysis (~~1990~~), 56(Catal.  
Olefin Polym.), 501-15  
CODEN: SSCTDM; ISSN: 0167-2991  
DT Journal  
LA English  
AB The chirality of metallocenes for prepn. of highly isotactic  
polypropylene was a necessary but not sufficient condition. Certain  
conditions concerning special electronic factors and steric  
arrangements are required. Variations in metallocene structure  
retaining chirality can lead to reduced isospecificity. Decreasing  
stereospecificity was demonstrated on syndiospecific metallocene  
catalysts.  
IT ~~130638-44-7~~  
(catalysts, stereospecific, for polymn. of propylene, structure  
in relation to)  
RN 130638-44-7 HCAPLUS  
CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-  
methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

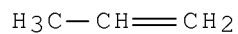


IT 25085-53-4P, Isotactic polypropylene  
 (prepn. of, in presence of stereospecific metallocene catalysts,  
 structure in relation to)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
 IT 100163-29-9, Ethylenebis(4,5,6,7-tetrahydro-1-indenyl) zirconium  
 dichloride 121009-93-6 128178-27-8 ~~130638-44-7~~  
 133190-48-4 133518-40-8 133518-41-9 134876-98-5  
 (catalysts, stereospecific, for polymn. of propylene, structure  
 in relation to)  
 IT 25085-53-4P, Isotactic polypropylene  
 (prepn. of, in presence of stereospecific metallocene catalysts,  
 structure in relation to)

=> D L70 1-34 TI

L70 ANSWER 1 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI An olefin polymerization process

L70 ANSWER 2 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Propene-norbornene copolymers: Synthesis and microstructure

L70 ANSWER 3 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Metallocene catalyst composition and process for preparing olefin polymers

L70 ANSWER 4 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Biscyclopentadienyl diene complex catalysts for polymerization of olefins

L70 ANSWER 5 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI The role of intermediate chain migration in propene polymerization using substituted  $\{iPr(CpFlu)\}ZrCl_2/MAO$  catalysts

L70 ANSWER 6 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Kinetics and mechanistic insight into propylene polymerization with different metallocenes and various aluminum alkyls as cocatalysts

L70 ANSWER 7 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Novel "naturally" compatible polyolefin alloys by single-site Ziegler catalysts

L70 ANSWER 8 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Group 4 Cs symmetric catalysts and 1-olefin polymerization

L70 ANSWER 9 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Catalyst system for producing isotactic/syndiotactic olefin polymer blends in a single reactor

L70 ANSWER 10 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Hydrophilic polyolefin fibers and their manufacture

L70 ANSWER 11 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Catalyst using halogenated metallocene for alpha-olefin polymerization

L70 ANSWER 12 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI New polyolefins by metallocene catalysts

L70 ANSWER 13 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Olefin polymerization using supported metallocene catalysts: development of high activity catalysts for use in slurry and gas phase ethylene polymerizations

L70 ANSWER 14 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Biconstituent core-sheath fibers for use as binders for bonding woven and nonwoven fabrics

L70 ANSWER 15 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI On the mechanism of stereospecific polymerization - development of a universal model to demonstrate the relationship between metallocene structure and polymer microstructure

L70 ANSWER 16 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Biscyclopentadienyl diene complex polymerization catalysts for unsaturated monomers

L70 ANSWER 17 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI doubly-conformationally locked, stereorigid catalysts for the preparation of tactiospecific polymers

L70 ANSWER 18 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Correlation between configuration/conformation of zirconocenes on the stereoselectivity of the propylene polymerization reaction

L70 ANSWER 19 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Method for producing  $\alpha$ -olefin polymers.

L70 ANSWER 20 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Polymerization of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with common alkylaluminums

L70 ANSWER 21 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Gas phase polymerization reaction utilizing soluble unsupported catalysts

L70 ANSWER 22 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Olefin polymerization catalyst and olefin polymerization process

L70 ANSWER 23 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Polymerizing olefins in the presence of metallic catalysts

L70 ANSWER 24 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Olefin polymerization catalysts and their use in manufacture of polyolefins

L70 ANSWER 25 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
TI Catalysts containing metallocenes for preparation of polyolefins with high molecular weight

L70 ANSWER 26 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

TI Catalysts for polymerization of olefins  
 L70 ANSWER 27 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 TI Catalysts for polymerizing olefins with wide molecular weight distribution  
 L70 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 TI Catalysts for polymerization of olefins  
 L70 ANSWER 29 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 TI Magnesium compound-supported polymerization catalysts for  $\alpha$ -olefins  
 L70 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 TI Catalysts for polymerization of olefins  
 L70 ANSWER 31 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 TI Ziegler-Natta catalysis. A theoretical study of the isotactic polymerization of propylene  
 L70 ANSWER 32 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 TI Catalysts for polymerization of olefins  
 L70 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 TI Stereospecific polymerization of propylene in the presence of homogeneous catalysts: ligand-monomer enantioselective interactions  
 L70 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 TI Process and catalysts for producing large symmetrical polyolefin particles

=> D L70 5,10,15,20,25,30,34 BIB ABS HITSTR HITIND RE

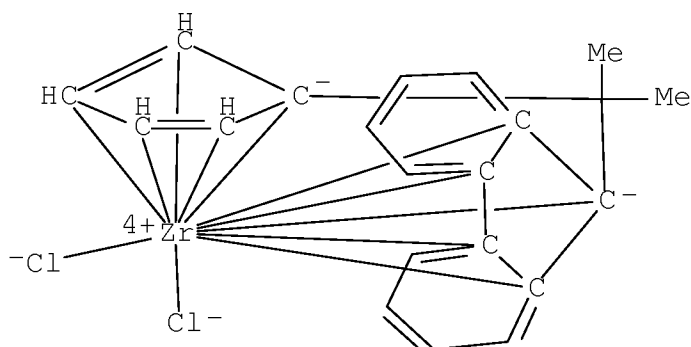
L70 ANSWER 5 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2000:104572 HCAPLUS Full-text  
 DN 132:237429  
 TI The role of intermediate chain migration in propene polymerization using substituted {iPr(CpFlu)}ZrCl<sub>2</sub>/MAO catalysts  
 AU Angermund, Klaus; Fink, Gerhard; Jensen, Vidar R.; Kleinschmidt, Ralph  
 CS Max-Planck-Institut Kohlenforschung, Mulheim an der Ruhr, D-45470, Germany  
 SO Macromolecular Rapid Communications (2000), 21(2), 91-97  
 CODEN: MRCOE3; ISSN: 1022-1336  
 PB Wiley-VCH Verlag GmbH

DT Journal  
 LA English  
 AB Comparison of pentad distributions obtained from NMR spectra and from a mol. mechanics-based modeling approach is performed for the catalysts {iPr(3-X-Cp)(Flu)}ZrCl<sub>2</sub> (X = H, Me, Et, iPr, tBu) at a range of different temps. In order to model the temp. dependency of the pentad distributions the variation in steric influence along with the change of the rotational energy level for catalysts with substituents displaying relatively low barriers to rotation is treated approx. by calcg. energy profiles of 360° rotation of the alkyl groups. The temp. at which intermediate chain migration (back-skip) or chain epimerization start to be important seem to be rather const. (30-50°) among the 5 catalysts. Even in the case of X = tBu, back-skip seems to be unimportant for explaining the formation of isotactic polymer at room temp.

IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride  
 (intermediate chain migration and transition states in propene polymn. using isopropylidene(alkyl-cyclopentadienyl)(fluorenyl)zirconium dichloride catalysts)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[η<sup>10</sup>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

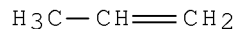


IT 25085-53-4P, Isotactic polypropylene  
 (intermediate chain migration and transition states in propene polymn. using isopropylidene(alkyl-cyclopentadienyl)(fluorenyl)zirconium dichloride catalysts)

RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CRN 115-07-1  
CMF C3 H6



- CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 29
- IT 130638-44-7, Isopropylidene(cyclopentadienyl)(9-fluorenyl)zirconium dichloride 133190-48-4 146961-02-6  
146997-14-0 148821-61-8 162260-01-7 262298-63-5 262298-64-6  
(intermediate chain migration and transition states in propene  
polymn. using isopropylidene(alkyl-  
cyclopentadienyl)(fluorenyl)zirconium dichloride catalysts)
- IT 25085-53-4P, Isotactic polypropylene  
(intermediate chain migration and transition states in propene  
polymn. using isopropylidene(alkyl-  
cyclopentadienyl)(fluorenyl)zirconium dichloride catalysts)
- RE
- (1) Angermund, K; Ziegler Catalysts 1995
  - (2) Anon; ADF 2.3.0, Theoretical Chemistry 1997
  - (3) Arlman, E; J Catal 1964, V3, P89 HCAPLUS
  - (4) Arlman, E; J Catal 1964, V3, P99 HCAPLUS
  - (5) Baerends, E; Chem Phys 1973, V2, P41 HCAPLUS
  - (6) Becke, A; Phys Rev A 1988, V38, P3098 HCAPLUS
  - (7) Bovey, F; Chain Structure and Conformation of Macromolecules 1982
  - (8) Bovey, F; High Resolution NMR of Macromolecules 1972
  - (9) Brintzinger, H; Angew Chem, Int Ed Engl 1995, V34, P1143 HCAPLUS
  - (10) Cahn, R; Angew Chem, Int Ed Engl 1966, V5, P385 HCAPLUS
  - (11) Cavallo, L; Organometallics 1996, V15, P2254 HCAPLUS
  - (12) Corradini, P; Eur Polym J 1979, V15, P1133 HCAPLUS
  - (13) Corradini, P; Gazz Chim Ital 1983, V113, P601 HCAPLUS
  - (14) Cossee, P; J Catal 1964, V3, P80 HCAPLUS
  - (15) Ewen, J; Makromol Chem, Macromol Symp 1991, V48/49, P253
  - (16) Ewen, J; Ziegler Catalysts 1995
  - (17) Fonseca Guerra, C; Methods and Techniques in Computational Chemistry 1995
  - (18) Guerra, G; Macromol Symp 1995, V89, P307 HCAPLUS
  - (19) Guerra, G; Macromolecules 1996, V29, P4834 HCAPLUS
  - (20) Guerra, G; Makromol Chem, Macromol Symp 1993, V69, P237 HCAPLUS
  - (21) Hanson, K; J Am Chem Soc 1966, V88, P2731 HCAPLUS
  - (22) Hart, J; J Am Chem Soc 1993, V115, P6159 HCAPLUS
  - (23) Herfert, N; Makromol Chem 1992, V193, P1359 HCAPLUS



AB Syndiotactic propylene polymer fibers, polyolefin blend fibers contg.  $\geq 30\%$  syndiotactic propylene polymers, or core-sheath fibers of polyolefin core and sheath of syndiotactic propylene polymers or polyolefins contg.  $\geq 30\%$  syndiotactic propylene polymers are oxidized to introduce O-contg. functional groups on the fiber surface. The oxidn. method is selected from electron beam irradiation,  $\gamma$ -ray irradiation, UV irradiation, photon method, flame method, corona discharge, and glow discharge and is carried out by the use of  $\geq 1$  gas selected from air, O, N, CO, CO<sub>2</sub>, He, Ar, S oxides, and N oxides. Thus, a nonwoven fabric made of syndiotactic polypropylene [pentad fraction 0.78; prepd. by the use of isopropyl(cyclopentadienyl-1-fluorenyl)zirconium dichloride, Et<sub>3</sub>Al, and tris(pentafluorophenyl)boron] fiber was treated with corona discharge to show good H<sub>2</sub>O absorption without deterioration of its strength.

IT 25085-53-4, Isotactic polypropylene  
(fiber; oxidn. of syndiotactic polypropylene-based fibers for hydrophilicity without deterioration of strength)

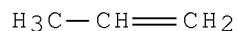
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

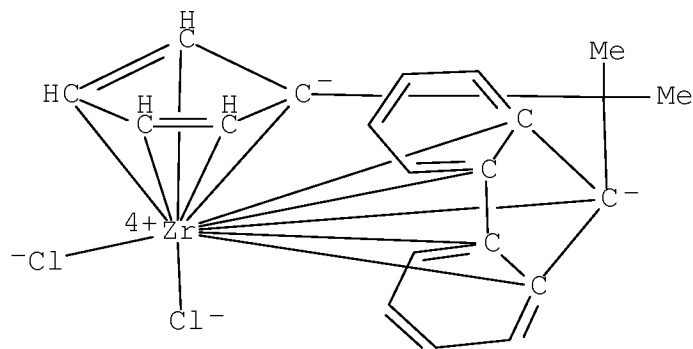
CMF C3 H6



IT 130638-44-7P, Isopropyl(cyclopentadienyl-1-fluorenyl)zirconium dichloride  
(polymn. catalyst; oxidn. of syndiotactic polypropylene-based fibers for hydrophilicity without deterioration of strength)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IC ICM D01F006-06  
 ICS D01F006-46; D01F008-06; D06M010-00; D06M011-52; D06M013-256  
 CC 40-10 (Textiles and Fibers)  
 Section cross-reference(s): 35, 67  
 IT 9002-88-4 25085-53-4, Isotactic polypropylene  
 (fiber; oxidn. of syndiotactic polypropylene-based fibers for  
 hydrophilicity without deterioration of strength)  
 IT 130638-44-7P, Isopropyl(cyclopentadienyl-1-  
 fluorenyl)zirconium dichloride  
 (polymn. catalyst; oxidn. of syndiotactic polypropylene-based  
 fibers for hydrophilicity without deterioration of strength)

L70 ANSWER 15 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 1997:325208 HCAPLUS Full-text  
 DN 126:343902  
 OREF 126:66887a,66890a  
 TI On the mechanism of stereospecific polymerization - development of a  
 universal model to demonstrate the relationship between metallocene  
 structure and polymer microstructure  
 AU van der Leek, Y.; Angermund, K.; Reffke, M.; Kleinschmidt, R.;  
 Goretzki, R.; Fink, G.  
 CS Max-Planck-Inst. fur Kohlenforschung, Mulheim an der Ruhr, D-45470,  
 Germany  
 SO Chemistry--A European Journal (1997), 3(4), 585-591  
 CODEN: CEUJED; ISSN: 0947-6539  
 PB VCH  
 DT Journal  
 LA English  
 AB In this paper it is demonstrated that the simple rule of thumb that  
 C2-sym. catalysts produce isotactic and Cs-sym. catalysts  
 syndiotactic polypropylene is too narrow. The introduction of one Me  
 group at the Cp ring in the [ $\text{iPr}(\text{CpFlu})\text{ZrCl}_2$ ]/MAO system (Flu =  
 fluorenyl, MAO = methylalumoxane) reduces the Cs symmetry to C1, and

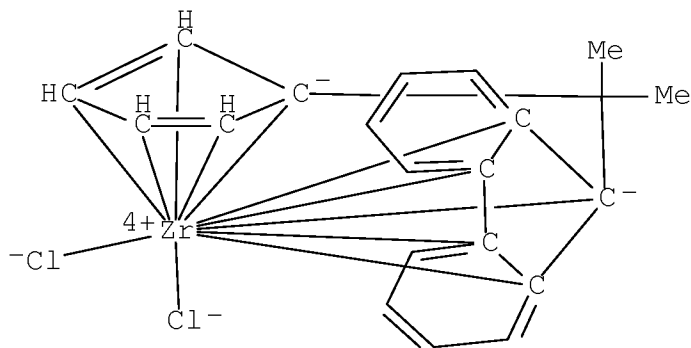
the resulting catalyst produces hemiisotactic polypropylene. The analogous catalyst with a bulkier tert-Bu group on the Cp ring gives isotactic polypropylene. When the C2 symmetry of  $[\{\text{Me}_2\text{Si}(\text{Ind})_2\}\text{ZrCl}_2]$  (Ind = indenyl) is reduced to C1, a metallocene can be obtained that produces atactic polypropylene. The authors have broken away from the symmetry-based model and developed a universal model, which accurately describes the exptl. microstructures of the polymers by considering the four lowest-energy conformers of the metallocene species coordinating to prochiral propene (Rre, Sre, Ssi, and Rsi) and the positional changes that the polymer chain undergoes during insertion. The relative energy levels of the four diastereomers can be detd. by mol. modeling calcns.; these energy gradations, in particular the size of the energy gaps, are decisive in detg. the stereospecificity. Also, the model permits the stereoerrors to be classified and explained. Through this model the stereosequence of a polymer chain can be calcd. and predicted.

IT 130638-44-7

(development of universal model to demonstrate relationship between metallocene structure and polymer microstructure)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta^{10}$ -2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

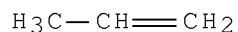
(development of universal model to demonstrate relationship between metallocene structure and polymer microstructure)

RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

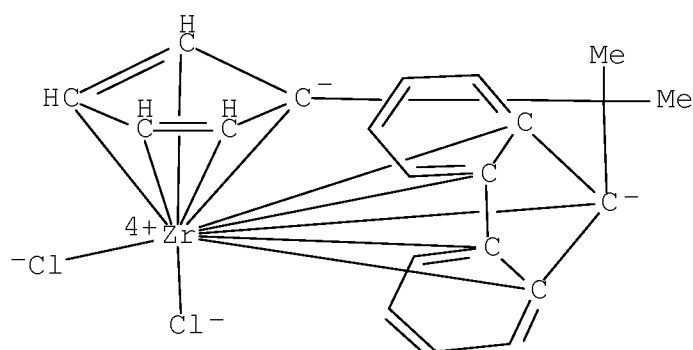
CM 1

CRN 115-07-1



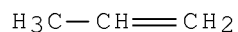
- CC 35-3 (Chemistry of Synthetic High Polymers)
- IT 130638-44-7 133190-48-4 146961-02-6 146997-14-0  
(development of universal model to demonstrate relationship  
between metallocene structure and polymer microstructure)
- IT 25085-53-4P, Isotactic polypropylene 26063-22-9P,  
Syndiotactic polypropylene  
(development of universal model to demonstrate relationship  
between metallocene structure and polymer microstructure)
- RE
- (1) Angermund, K; Ziegler Catalysts, Recent Scientific Innovations and Technological Improvements 1995, P251 HCAPLUS
  - (2) Aulbach, M; Chem Unserer Zeit 1994, V28, P197
  - (3) Cavallo, L; Macromolecules 1991, V24, P1784 HCAPLUS
  - (4) Corradini, P; Makromol Chem Rapid Commun 1992, V13, P21 HCAPLUS
  - (5) Corradini, P; Prog Polym Sci 1991, V16, P239 HCAPLUS
  - (6) Ewen, J; EP 537130 1992 HCAPLUS
  - (7) Ewen, J; J Am Chem Soc 1988, V110, P6255 HCAPLUS
  - (8) Farina, M; Macromol Chem Phys 1995, V196, P353 HCAPLUS
  - (9) Farina, M; Macromolecules 1993, V26, P946 HCAPLUS
  - (10) Fink, G; Ziegler Catalysts, Recent Scientific Innovations and Technological Improvements 1995, P159 HCAPLUS
  - (11) Guerra, G; Makromol Symp 1995, P307 HCAPLUS
  - (12) Herfert, N; Makromol Chem Macromol Symp 1993, V66, P157 HCAPLUS
  - (13) Kaminsky, W; Angew Chem 1985, V97, P507 HCAPLUS
  - (14) Kaminsky, W; Angew Chem Int Ed Engl 1985, V24, P507
  - (15) Langhauser, F; Angew Makromol Chem 1994, V223, P155 HCAPLUS
  - (16) Montag, P; Dissertation, Heinrich-Heine-Universitat 1995
  - (17) Montag, P; J Organomet Chem 1995, V497, P201 HCAPLUS
  - (18) Nolte, M; Dissertation, Westfalische Wilhelms-Universitat Munster 1992
  - (19) Reffke, M; Diploma thesis, Heinrich-Heine-Universitat Dusseldorf 1995
  - (20) Spaleck, W; Organometallics 1994, V13, P954 HCAPLUS
  - (21) Spaleck, W; Ziegler Catalysts, Recent Scientific Innovations and Technological Improvements 1995, P83 HCAPLUS
  - (22) Stehling, U; Organometallics 1994, V13, P964 HCAPLUS
  - (23) Tripos Assoc; Version 6 X

AN 1994:631457 HCAPLUS Full-text  
 DN 121:231457  
 OREF 121:42227a,42230a  
 TI Polymerization of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with common alkylaluminums  
 AU Soga, Kazuo; Kim, Hyun Joon; Shiono, Takeshi  
 CS Research Laboratory Resources Utilization, Tokyo Inst. Technology, Yokohama, 227, Japan  
 SO Macromolecular Chemistry and Physics (1994), 195(10), 3347-60  
 CODEN: MCHPES; ISSN: 1022-1352  
 DT Journal  
 LA English  
 AB Several types of SiO<sub>2</sub>-supported metallocene catalysts were prepd. using chem. modified silica gel. Polymn. of propene(I) was conducted with these catalysts combined with methylaluminoxane (MAO) or ordinary alkylaluminums. Highly isotactic polypropylene with high mol. wt. was obtained by the catalysts whose zirconocene ligands were chem. immobilized on SiO<sub>2</sub>. The preparative methods of these catalysts and the results of I polymn., together with the anal. data of produced polymers, are reported in some detail.  
 IT 130638-44-7  
 (polymn. of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with methylaluminoxane or alkylaluminums)  
 RN 130638-44-7 HCAPLUS  
 CN Zirconium, dichloro[η<sup>10</sup>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic Polypropylene  
 (polymn. of propene with highly isospecific SiO<sub>2</sub>-supported zirconocene catalysts activated with methylaluminoxane or

alkylaluminums)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)  
 CM 1  
 CRN 115-07-1  
 CMF C3 H6



CC 35-3 (Chemistry of Synthetic High Polymers)  
 IT 7631-86-9, Silica, uses 112243-78-4 112243-79-5 119821-97-5  
 130638-44-7  
 (polymn. of propene with highly isospecific SiO2-supported  
 zirconocene catalysts activated with methylaluminoxane or  
 alkylaluminums)  
 IT 9003-07-0P, Polypropylene 25085-53-4P, Isotactic  
 Polypropylene  
 (polymn. of propene with highly isospecific SiO2-supported  
 zirconocene catalysts activated with methylaluminoxane or  
 alkylaluminums)

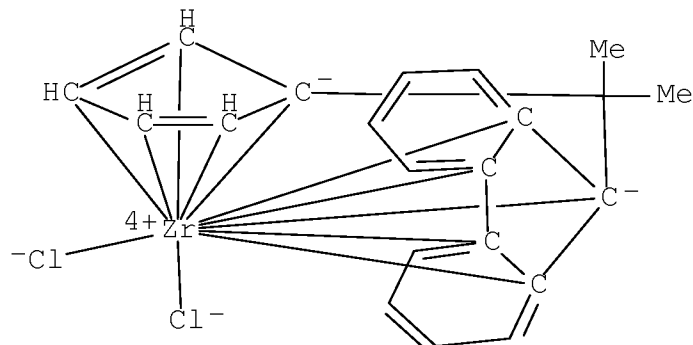
L70 ANSWER 25 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN  
 AN 1993:671955 HCAPLUS Full-text  
 DN 119:271955  
 OREF 119:48697a  
 TI Catalysts containing metallocenes for preparation of polyolefins  
 with high molecular weight  
 IN Kaminsky, Walter; Renner, Florian  
 PA Hoechst A.-G., Germany  
 SO Ger. Offen., 8 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	DE 4121368	A1	19930107	DE 1991-4121368	199106 28

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EP 523416	A2	19930120	EP 1992-110698	199206 25
			<--	
EP 523416	A3	19930217		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
AT 185819	T	19991115	AT 1992-110698	199206 25
			<--	
ES 2138961	T3	20000201	ES 1992-110698	199206 25
			<--	
CA 2072490	A1	19921229	CA 1992-2072490	199206 26
			<--	
AU 9218576	A	19930107	AU 1992-18576	199206 26
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AU 653029	B2	19940915		
ZA 9204751	A	19930224	ZA 1992-4751	199206 26
			<--	
JP 05331230	A	19931214	JP 1992-169487	199206 26
			<--	
GR 3031728	T3	20000229	GR 1999-402822	199911 03
			<--	
PRAI DE 1991-4121368	A	19910628	<--	
OS MARPAT 119:271955				
AB Polymn. catalysts comprising aluminoxanes and supported metallocenes, e.g., ethylenebis(1-indenyl)zirconium dichloride (I) or ethylenebis(tetrahydro-1-indenyl)zirconium dichloride, are useful for the prepn. of polyolefins having high mol. wt., m.p., and stereoregularity and narrow mol. wt. distribution. An aluminoxane and silica-supported I were used for the polymn. of propene, giving polypropene having mol. wt. 958,000 and m.p. 160.1°.				
IT 130638-44-7				
(catalysts, for polymn. of olefins)				
RN 130638-44-7 HCAPLUS				

CN Zirconium, dichloro[ $\eta^{10}$ -2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

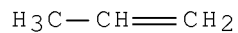


IT 25085-53-4P, Isotactic polypropene  
 (prepn. of, with high mol. wt., catalysts for)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F004-02  
 ICS C08F004-80; C08F004-76; C08F004-622; C08F004-642; C08F004-68;  
 C08F004-58; C08F010-06  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 IT 100080-82-8 100163-29-9 121009-93-6 126642-97-5  
~~130638-44-7~~ 132510-07-7 132530-06-4 134041-32-0  
 150500-58-6  
 (catalysts, for polymn. of olefins)  
 IT 9002-88-4P, Polyethylene 9003-07-0P, Polypropene  
 25085-53-4P, Isotactic polypropene  
 (prepn. of, with high mol. wt., catalysts for)

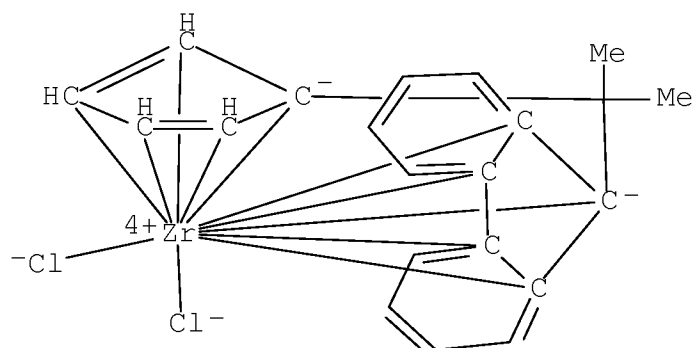
L70 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1992:427417 HCAPLUS Full-text  
 DN 117:27417  
 OREF 117:4979a,4982a  
 TI Catalysts for polymerization of olefins  
 IN Dolle, Volker; Herrmann, Hans Friedrich; Winter, Andreas; Spaleck, Walter  
 PA Hoechst A.-G., Germany  
 SO Eur. Pat. Appl., 12 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
PI	EP 480390	A2	19920415	EP 1991-117170	199110 09
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	EP 480390	A3	19921119		
	EP 480390	B1	19970716		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
	DE 4032266	A1	19920416	DE 1990-4032266	199010 11
				<--	
	ZA 9108075	A	19920624	ZA 1991-8075	199110 09
				<--	
	JP 04264110	A	19920918	JP 1991-262260	199110 09
				<--	
	AT 155495	T	19970815	AT 1991-117170	199110 09
				<--	
	ES 2106754	T3	19971116	ES 1991-117170	199110 09
				<--	
	CA 2053199	A1	19920412	CA 1991-2053199	199110 10
				<--	
	AU 9185783	A	19920416	AU 1991-85783	

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AU 650676 B2 19940630  
 PRAI DE 1990-4032266 A 19901011 <--  
 AB Polyolefins with high tacticity and mol. wt. and narrow mol. wt. distribution are prepd. by polymn. in the presence of catalysts contg. alkyl aluminoxanes (d.p. 2-50) and metallocenes. Stirring 10 dm<sup>3</sup> liq. C<sub>3</sub>H<sub>6</sub>, 35 mL 10:90 iso-Bu Me aluminoxane (d.p. 30), and 3.8 mg [(dimethylsilylene)diindenyl]zirconium dichloride at 70° for 60 min gave polypropylene with catalyst activity 400 kg/g metallocene-h, wt.-av. mol. wt. 52,000, polydispersity 2.1, and isotactic index 92%.  
 IT 130638-44-7  
 (catalysts, for polymn. of olefins)  
 RN 130638-44-7 HCAPLUS  
 CN Zirconium, dichloro[η<sup>10</sup>-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)

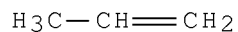


IT 25085-53-4P, Isotactic polypropylene  
 (manuf. of, catalysts for)  
 RN 25085-53-4 HCAPLUS  
 CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F010-00  
ICS C08F004-602  
CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 67  
IT 112243-78-4 119821-97-5 124684-46-4 ~~130638-44-7~~  
131855-48-6 135454-23-8 135910-63-3 136019-48-2  
(catalysts, for polymn. of olefins)  
IT ~~25085-53-4P~~, Isotactic polypropylene 26063-22-9P,  
Syndiotactic polypropylene 106565-43-9P, Ethylene-propylene block  
copolymer  
(manuf. of, catalysts for)

L70 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1990:441535 HCAPLUS Full-text

DN 113:41535

OREF 113:7077a,7080a

TI Process and catalysts for producing large symmetrical polyolefin  
particles

IN Ewen, John A.

PA Fina Technology, Inc., USA

SO Eur. Pat. Appl., 18 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 354893	A2	19900214	EP 1989-870121	198907 31
				<--	
	EP 354893	A3	19911106		
	EP 354893	B1	19941102		
	EP 354893	B2	20020313		
	R: BE, DE, FR, GB, IT, NL				
	CA 1339589	C	19971216	CA 1989-610252	198909 05
				<--	
	JP 03140305	A	19910614	JP 1989-272787	198910 21
				<--	
PRAI	US 1988-229361	A	19880805	<--	

OS MARPAT 113:41535

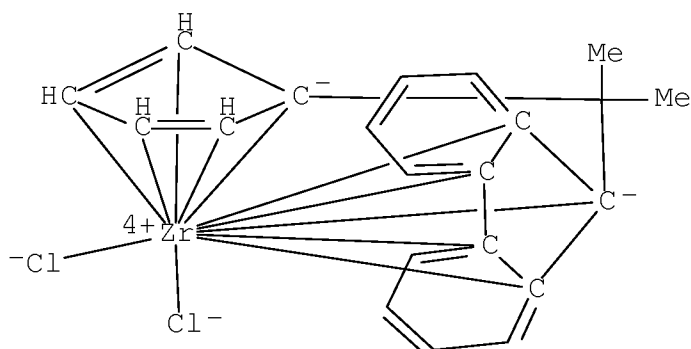
AB The title particles, with high bulk d., are prepd. by prepolyng. olefins in the presence of pptd. complexes of org. Al compds. and Group IVB, VB, or VIB metallocenes at temps. below the polymn. temp. of the olefin followed by polymg. the olefin under polymn. conditions. This process obviates the pelleting step ordinarily used to give polymers with better handling properties. Manuf. of polypropylene particles is exemplified.

IT 130638-44-7

(catalysts, for polymn. of olefins to large particles)

RN 130638-44-7 HCAPLUS

CN Zirconium, dichloro[ $\eta$ 10-2,4-cyclopentadien-1-ylidene(1-methylethylidene)-9H-fluoren-9-ylidene]- (CA INDEX NAME)



IT 25085-53-4P, Isotactic polypropylene

(manuf. of large particles with high bulk d., catalysts for)

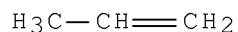
RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



IC ICM C08F004-649

ICS C08F010-00

CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 67

IT 96363-63-2 112243-78-4 119821-97-5 128214-24-4  
130638-44-7  
(catalysts, for polymn. of olefins to large particles)

IT 9003-07-0P, Polypropylene 25085-53-4P, Isotactic  
polypropylene 26063-22-9P, Syndiotactic polypropylene  
(manuf. of large particles with high bulk d., catalysts for)